Unit 5

Making Change, Time & Perimeter

Topic A: Counting to Make Change

Practice your counting by filling in the counting chart. Have your instructor check your chart when you are done.

0	1	2	3	4	5	6	7	8	9
10									

Use your counting chart and start at 0. Count five and write down that number.

0	**5**	**10**							

If you had a pile of nickels or five dollar bills and wanted to know how much money you have, you would count by 5's.

Use your counting chart and starting at 0. Count ten and write down that number.

0	**10**	**20**							

If you had a pile of dimes or ten dollar bills and wanted to know how much money you have, you would count by 10's.

Use your counting chart and starting at 0. Count twenty-five and write down that number.

0	**25**			

If you had a pile of quarters and wanted to know how much money you have, you would count by 25's.

Exercise One

Write the missing numerals. Check your work using the answer key at the end of the exercise.

a) Count by 5's.

0		**10**		**20**		**30**		**40**	
50		**60**		**70**		**80**		**90**	

b) Count by 5's.

0	**5**		**15**		**25**		**35**		**45**
	55		**65**		**75**		**85**		**95**

c) Count by 5's.

0									

d) Count by 10's.

0	**10**		**30**		**50**		**70**		**90**

e) Count by 10's.

0		**20**		**40**		**60**		**80**	
100									

f) Count by 10's.

0									

g) Count by 25's.

0	**25**		**75**	

h) Count by 25's.

0		**50**		**100**

i) Count by 25’s.

0				

Answers to Exercise One

a)

0	***5***	**10**	***15***	**20**	***25***	**30**	***35***	**40**	***45***
50	***55***	**60**	***65***	**70**	***75***	**80**	***85***	**90**	***95***
100									

b)

0	**5**	***10***	**15**	***20***	**25**	***30***	**35**	***40***	**45**
50	**55**	***60***	**65**	***70***	**75**	***80***	**85**	***90***	**95**
100									

c)

0	***5***	***10***	***15***	***20***	***25***	***30***	***35***	***40***	***45***
50	***55***	***60***	***65***	***70***	***75***	***80***	***85***	***90***	***95***
100									

d)

0	**10**	***20***	**30**	***40***	**50**	***60***	**70**	***80***	**90**
100									

e)

0	***10***	**20**	***30***	**40**	***50***	**60**	***70***	**80**	***90***
100									

f)

0	***10***	***20***	***30***	***40***	***50***	***60***	***70***	***80***	***90***
100									

g)

0	**25**	***50***	**75**	***100***

h)

0	***25***	**50**	***75***	**100**

i)

0	***25***	***50***	***75***	***100***

Note: There is no self-test for this topic.

Topic B: Making Change

When you make change, your first goal is to get a number that ends in 0 or 5. So for example, if you bought something for 53¢, the first thing to do would be to get to 55¢. Check out example A below.

Example A: 53¢ to 55¢

To get from 53¢ to 55¢, you would need 2 pennies.

Example B: 20¢ to 25¢

To get from 20¢ to 25¢, you would 1 nickel.

Example C: 50¢ to 75¢

to get from 50¢ to 75¢, you would need 1 quarter.

Exercise One

Circle the number of coins you would need to get from the first number to the second number. Make sure to use the least number of coins you can. Check your work using the answer key at the end of the exercise.

a) 32¢ to 35¢

b) 48¢ to 50¢

c) 16¢ to 20¢

d) 67¢ to 70¢

e) 10¢ to 15¢

f) 35¢ to 40¢

g) 55¢ to 60¢

h) 85¢ to 90¢

i) 60¢ to 70¢

j) 80¢ to 90¢

k) 30¢ to 40¢

l) 15¢ to 25¢

m) 25¢ to 50¢

n) 50¢ to 75¢

o) 75¢ to $1.00

p) 45¢ to 50¢

q) 21¢ to 25¢

r) 55¢ to 65¢

s) 45¢ to 50¢

t) 40¢ to 50¢

u) 70¢ to 80¢

Answers to Exercise One

a) 3 pennies	b) 2 pennies	c) 4 pennies	d) 3 pennies	e) 1 nickel	f) 1 nickel
g) 1 nickel	h) 1 nickel	i) 1 dime	j) 1 dime	k) 1 dime	l) 1 dime
m) 1 quarter	n) 1 quarter	o) 1 quarter	p) 1 nickel	q) 4 pennies	r) 1 dime
s) 1 nickel	t) 1 dime	u) 1 dime			

Exercise Two

State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

Example: **56¢ to 60¢**

4 pennies to get to 60¢

a) 27¢ to 30¢

b) 35¢ to 45¢

c) 90¢ to 95¢

d) 25¢ to 50¢

e) 54¢ to 55¢

f) 25¢ to 50¢

g) 65¢ to 75¢

h) 40¢ to 45¢

i) 75¢ to $1.00

j) 41¢ to 45¢

k) 5¢ to 15¢

l) 55¢ to 65¢

m) 20¢ to 25¢

n) 50¢ to 75¢

o) 88¢ to 90¢

p) 25¢ to 75¢

q) 85¢ to 95¢

r) 50¢ to $1.00

s) 95¢ to $1.00

t) 77¢ to 80¢

u) 45¢ to 50¢

Answers to Exercise Two

a)	3 pennies	b)	1 dime	c)	1 nickel	d)	1 quarter	e)	1 penny	f)	1 quarter	g)	1 dime
h)	1 nickel	i)	1 quarter	j)	4 pennies	k)	1 dime	l)	1 dime	m)	1 nickel	n)	1 quarter
o)	2 pennies	p)	2 quarters	q)	1 dime	r)	2 quarters	s)	1 nickel	t)	3 pennies	u)	1 nickel

Example A: 28¢ to 50¢

You would need 2 pennies to get to 30¢.
Then you would need 2 dimes to get to 50¢.

Example B: 36¢ to 50¢

You would need 4 pennies to get to 40¢.
Then you would need 1 dime to get to 50¢.

Example C: 60¢ to 75¢

You would need 1 nickel to get to 65¢.
Then you would need 1 dime to get to 75¢.

OR

You could also begin with 1 dime to get to 70¢.
Then you would need 1 nickel to get to 75¢.

Exercise Three

State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

Example: **67¢ to 75¢**

3 pennies to get to 70¢
1 nickel to get to 75¢.

a) 26¢ to 50¢

b) 47¢ to 75¢

c) 69¢ to 75¢

d) 18¢ to 25¢

e) 34¢ to 50¢

f) 51¢ to 75¢

g) 78¢ to $1.00

h) 82¢ to $1.00

i) 93¢ to $1.00

j) 3¢ to 25¢

k) 61¢ to 75¢

l) 58¢ to 75¢

m) 22¢ to 50¢

n) 64¢ to 75¢

o) 9¢ to 25¢

p) 72¢ to $1.00

q) 43¢ to 75¢

r) 84¢ to $1.00

s) 37¢ to 50¢

t) 86¢ to $1.00

u) 11¢ to 25¢

Answers to Exercise Three

a) 4 pennies, 2 dimes	b) 3 pennies, 1 quarter	c) 1 penny. 1 nickel
d) 2 pennies, 1 nickel	e) 1 penny, 1 nickel, 1 dime	f) 4 pennies, 2 dimes
g) 2 pennies, 2 dimes	h) 3 pennies, 1 nickel, 1 dime	i) 2 pennies, 1 nickel
j) 2 pennies, 2 dimes	k) 4 pennies, 1 dime	l) 2 pennies, 1 nickel, 1 dime
m) 3 pennies, 1 quarter	n) 1 penny, 1 dime	o) 1 penny, 1 nickel, 1 dime
p) 3 pennies, 1 quarter	q) 2 pennies, 1 nickel, 1 quarter	r) 1 penny, 1 nickel, 1 dime
s) 3 pennies, 1 dime	t) 4 pennies, 1 dime	u) 4 pennies, 1 dime

Exercise Four

State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

Example: **67¢ to 75¢**

3 pennies to get to 70¢
1 nickel to get to 75¢.

a) 33¢ to 50¢

b) 6¢ to 25¢

c) 76¢ to $1.00

d) 53¢ to 75¢

e) 62¢ to 75¢

f) 17¢ to 50¢

g) 92¢ to $1.00

h) 26¢ to 50¢

i) 46¢ to $1.00

j) 73¢ to $1.00

k) 83¢ to $1.00

l) 4¢ to 25¢

m) 36¢ to 50¢

n) 98¢ to $1.00

o) 63¢ to 75¢

p) 42¢ to 50¢

q) 19¢ to 25¢

r) 23¢ to 50¢

s) 56¢ to 75¢

t) 31¢ to 50¢

u) 89¢ to $1.00

Answers to Exercise Four

a) 2 pennies, 1 nickel, 1 dime	b) 4 pennies, 1 nickel, 1 dime	c) 4 pennies, 2 dimes
d) 2 pennies, 2 dimes	e) 3 pennies, 1 dime	f) 3 pennies, 1 nickel, 1 quarter
g) 3 pennies, 1 nickel	h) 4 pennies, 2 dimes	i) 4 pennies, 2 quarters
j) 2 pennies, 1 quarter	k) 2 pennies, 1 nickel, 1 dime	l) 1 penny, 2 dimes
m) 4 pennies, 1 dime	n) 2 pennies	o) 2 pennies, 1 dime
p) 3 pennies, 1 nickel	q) 1 penny, 1 nickel	r) 2 pennies, 1 quarter
s) 4 pennies, 1 nickel, 1 dime	t) 4 pennies, 1 nickel, 1 dime	u) 1 penny, 1 dime

Exercise Five

State the number and kind of coins you would need to get change from $1.00. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

Example: **45¢ to $1.00**

1 nickel to get to 50¢
2 quarters to get to $1.00.

a) 99¢

b) 57¢

c) 38¢

d) 13¢

e) 49¢

f) 74¢

g) 81¢

h) 70¢

i) 29¢

j) 8¢

k) 66¢

l) 12¢

m) 7¢

n) 39¢

o) 52¢

p) 83¢

q) 97¢

r) 48¢

s) 61¢

t) 26¢

u) 91¢

Answers to Exercise Five

a) 1 penny	b) 3 pennies, 1 nickel, 1dime 1 quarter
c) 2 pennies, 1 dime, 2 quarters	d) 2 pennies, 1 dime, 3 quarters
e) 1 penny, 2 quarters	f) 1 penny, 1 quarter
g) 4 pennies, 1 nickel, 1 dime	h) 1 nickel, 1 quarter
i) 1 penny, 2 dimes, 2 quarters	j) 2 pennies, 1 nickel, 1 dime, 3 quarters
k) 4 pennies, 1 nickel, 1 quarter	l) 3 pennies, 1 dime, 3 quarters
m) 3 pennies, 1 nickel, 1dime, 3 quarters	n) 1 penny, 1 dime, 2 quarters
o) 3 pennies, 2 dimes, 1 quarter	p) 2 pennies, 1 nickel, 1 dime
q) 3 pennies	r) 2 pennies, 2 quarters
s) 4 pennies, 1 dime, 1 quarter	t) 4 pennies, 2 dimes, 2 quarters
u) 4 pennies, 1 nickel	

Exercise Six

State the number and kind of coins you would need to get change from $1.00. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

a)

2 oranges cost 69¢

1 penny, 1 nickel and 1 quarter

b)

3 pencils cost 78¢

c)

1 roll of toilet paper costs 27¢

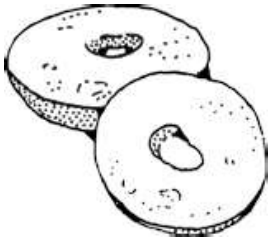
d)

a can of sardines costs 79¢

e)

1 lemon costs 39¢

f)



a bagel costs 54¢

g)

a roll of paper towels costs 83¢

h)

a jar of baby food costs 75¢

i)

a box of kleenex costs 79¢

j)

a bag of candy costs 69¢

Answers to Exercise Six

b) 3 pennies, 2 dimes
c) 3 pennies, 2 dimes, 2 quarters
d) 1 penny, 2 dimes
e) 1 penny, 1 dime, 2 quarters
f) 1 penny, 2 dimes, 1 quarter
g) 2 pennies, 1 nickel,1 dime
h) 1 quarter
i) 1 penny, 2 dimes
j) 1 penny, 1 nickel, 1 quarter

Exercise Seven

State the number and kind of coins you would need to get change from $1.00. Make sure you use the least number of coins as possible. Check your work using the answer key at the end of the exercise.

a) Mrs. Bakshi bought two flower pots that cost 88¢. What change will she get from $1.00?

b) Poloma bought a can of cat food for 71¢. What change will she get from $1.00?

c) Two apples cost 76¢. What change will you get from $1.00?

d) A pen costs 69¢. What change will you get from $1.00?

Answers to Exercise Sven

a) 2 pennies, 1 dime

b) 4 pennies, 1 quarter

c) 4 pennies, 2 dimes

d) 1 penny, 1 nickel, 1 quarter

Topic B: Self-Test

Mark /21 **Aim 17/21**

A. Circle the number of coins needed to get from the first number to the second number. Use the least number of coins. 4 marks

a) 76¢ to 80¢

b) 20¢ to 25¢

c) 40¢ to 50¢

d) 50¢ to 75¢

B. State the number and kind of coin needed to get from the first number to the second number. 4 marks

a) 48¢ to 50¢

b) 70¢ to 75¢

c) 90¢ to $1.00

d) 25¢ to 50¢

C. State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible. 4 marks

a) 37¢ to 50¢

b) 16¢ to 50¢

c) 52¢ to 75¢

d) 81¢ to $1.00

D. State the number and kind of coins you would need to get change from $1.00. Make sure you use the least number of coins as possible. 9 marks

a) 23¢

b) 41¢

c) 68¢

d) 72¢

e) a plastic beach shovel costs 89¢

f) 2 plums cost 68¢

g) a head of lettuce cost 59¢

h) Mr. Smith bought one can of frozen juice for 67¢. What change will get from $1.00?

i) Mrs. Nishi bought a can of pineapple for 83¢. How much change will she get back from$1.00?

Answers to Topic B Self-Test

A.

a) 4 pennies b) 1 nickel c) 1 dime d) 1 quarter

B.

a) 2 pennies b) 1 nickel c) 1 dime d) 1 quarter

C.

a) 3 pennies, 1 dime b) 4 pennies, 1 nickel, 1 quarter c) 3 pennies, 2 dimes
d) 4 pennies, 1 dime

D.

a) 2 pennies, 3 quarters b) 4 pennies, 1 nickel, 2 quarters
c) 2 pennies, 1 nickel, 1 quarter d) 3 pennies, 1 quarter
e) 1 penny, 1 dime f) 2 pennies, 1 nickel, 1 quarter
g) 1penny, 1 nickel, 1 dime, 1 quarter h) 3 pennies, 1 nickel, 1 quarter
i) 2 pennies, 1 nickel, 1 dime

Topic C: Telling Time

We have always been interested in keeping track of time. Sundials were the first way used to keep of track of time. The sundial had limits. It needed the sun and could not keep track of time at night. Through the centuries, many things have been used to keep track of time. In our modern society, we have used clocks. There are two types of clocks – digital and analog. Digital clocks display the time as numbers.

Analog clocks are clocks with hands. The shorter hand tells the hour and the longer hand tells the minutes. An easy way to remember the hour hand and the minutes hand is that **hour** is a shorter word than **minute** and the shorter hand tells the hour.

In an analog clock, the minute hand travels faster than the hour hand as it has to cover 60 minutes. The hour hand only needs to travel between the numerals in the same time it takes the minute hand to cover 60 minutes.

To tell what time it is, look at the shorter hand to figure out what hour it is. Next, look at the minute hand to figure out the minutes. Each numeral of the clock represents a certain number of minutes. Look at the chart.

Numeral	**Minutes**
1	5
2	10
3	15
4	20
5	25
6	30
7	35
8	40
9	45
10	50
11	55
12	o’clock

Exercise One

Write the time shown on each clock. Check your work using the answer key at the end of the exercise.

Example A:

The shorter hand is closer to the 7. The longer hand is before the six. This means that the hour is 7. The longer hand is pointing to the 5. This means 25 minutes (check the chart on the page before). The time would be written as 7:25.

Example B:

Look at the shorter hand. If the longer hand is past the six, then the hour is the numeral before the one the shorter hand is pointing at. This means that the hour is 12. The longer hand is pointing at the 10. This means 50 minutes (check the chart on the page before). The time would be written as 12:50.

a)

12
1
2
3
4
5
6
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10
11

b)

12
1
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6
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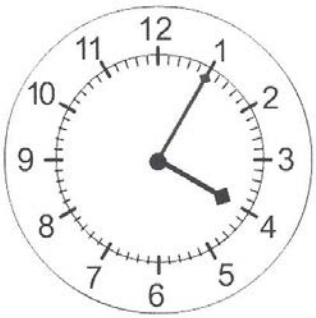
8
9
10
11

c)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d)

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m)

n)

Answers to Exercise One

a) 1:35	b) 9:15	c) 4:05	d) 12:30
e) 8:10	f) 5:55	g) 3:40	h) 2:50
i) 1:20	j) 4:45	k) 12:25	l) 6:10
m) 8:50	n) 9:40		

Exercise Two

Write the time shown on each clock. Check your work using the answer key at the end of the exercise.

a)

b)

c)

12
1
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d)

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e)

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f)

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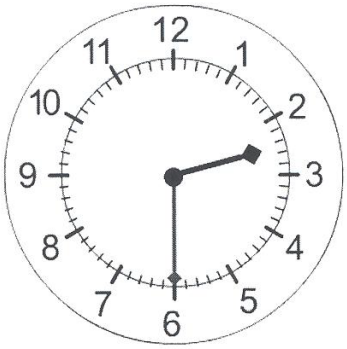
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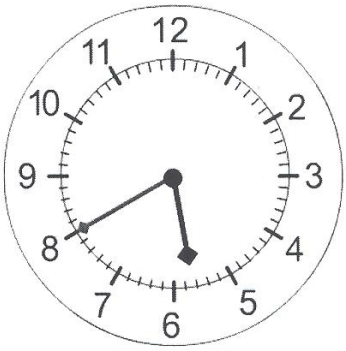
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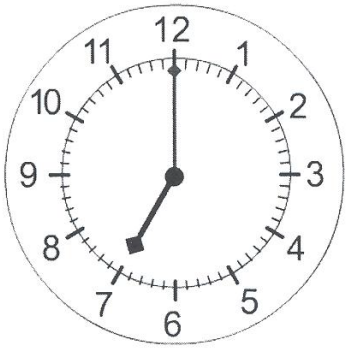
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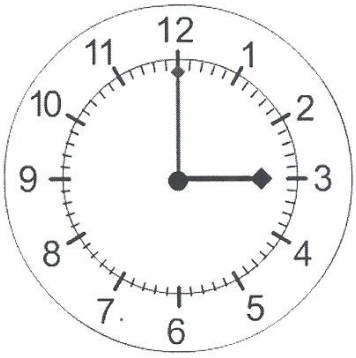
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n)

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Answers to Exercise Two

a) 10:20	b) 11:05	c) 1:10	d) 2:45
e) 3:30	f) 4:20	g) 5:15	h) 6:25
i) 2:30	j) 5:40	k) 7:00	l) 10:35
m) 3:00	n) 11:55		

There are 60 minutes in an hour. The numbers on the clock show 5-minute intervals. You are getting good at telling time when the minute hand is stopped at one of the numbers on the clock. If the minute hand is between the numbers, look at the number before and count by ones from there.

Example:

The time on this clock is 3:27. The minute hand is just pass the 5 which is 25 minutes and counting from there two lines is 27 minutes.

Exercise Three

Write the time shown on each clock. Check your work using the answer key at the end of the exercise.

a)

b)

c)

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d)

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e)

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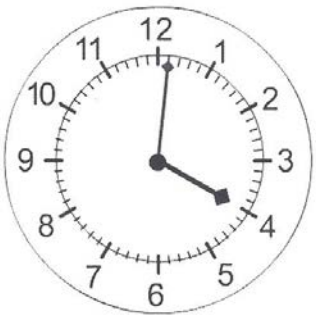
f)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g)

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h)

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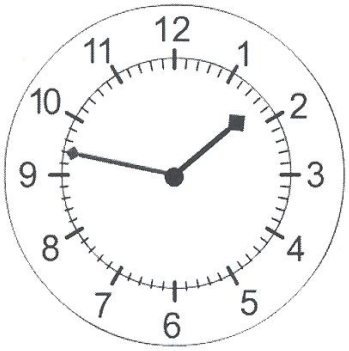
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n)

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11

o)

p)

q)

r)

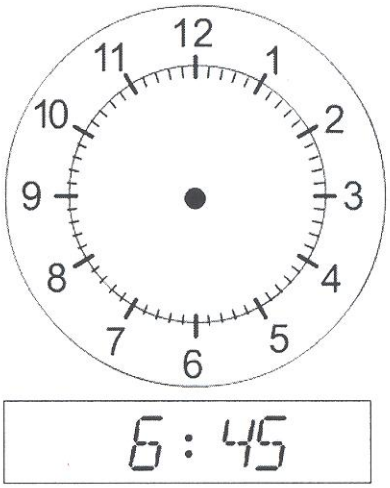
Answers to Exercise Three

a) 1:11	b) 12:41	c) 6:18	d) 3:39
e) 12:57	f) 4:01	g) 11:26	h) 6:12
i) 8:43	j) 9:51	k) 10:03	l) 5:38
m) 1:47	n) 7:33	o) 2:07	p) 9:22
q) 4:53	r) 3:28		

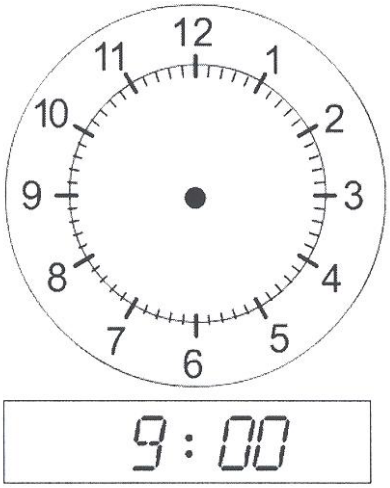
Exercise Four

Under each clock is a time on a digital clock. Put the hands on the analog clock to show the digital time. Check your work using the answer key at the end of the exercise.

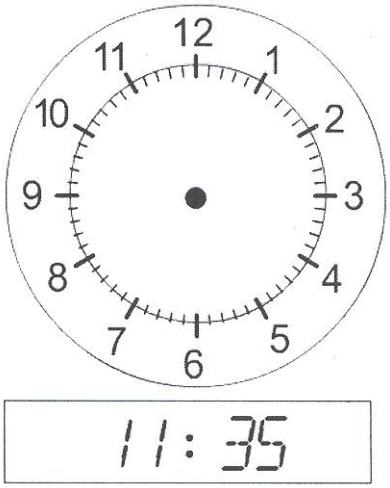
a)



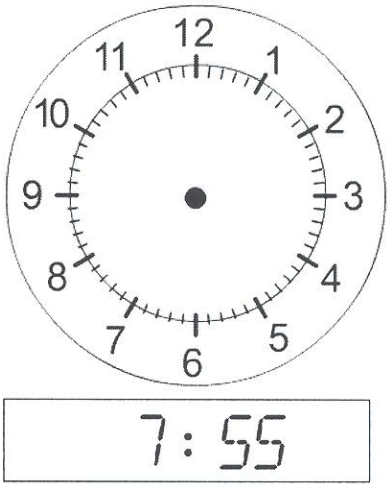
b)



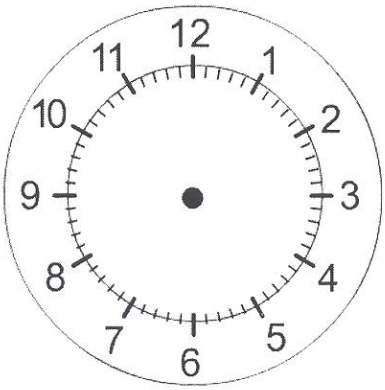
c)



d)

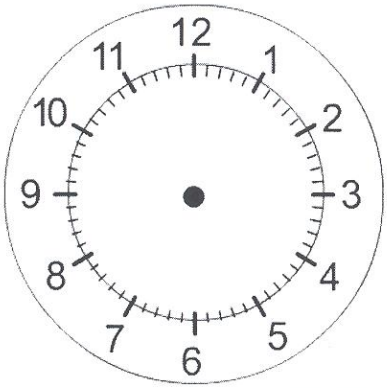


e)



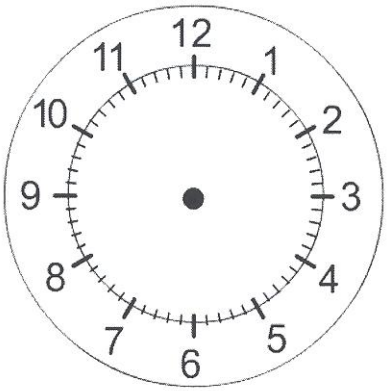
8 : 30

f)



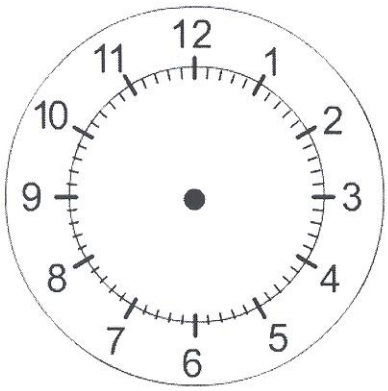
10 : 05

g)



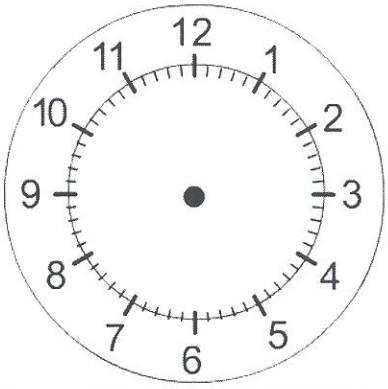
2 : 15

h)



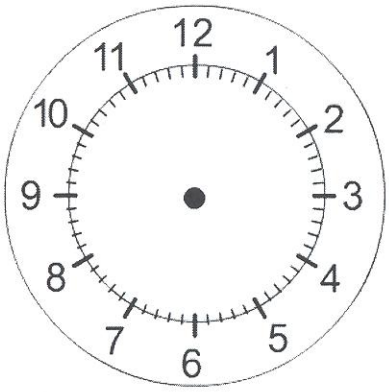
11 : 25

i)



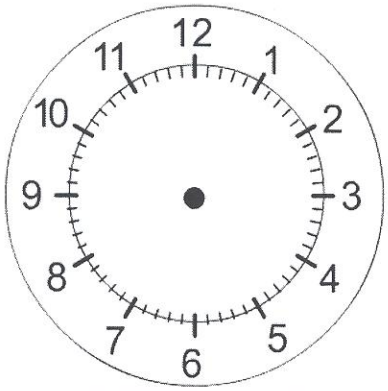
4 : 10

j)



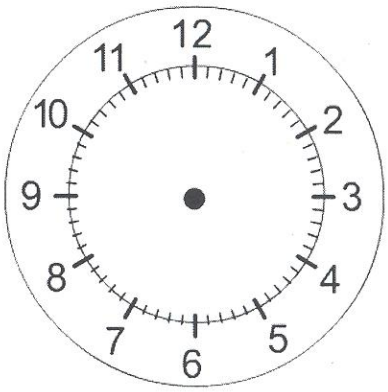
1 : 55

k)



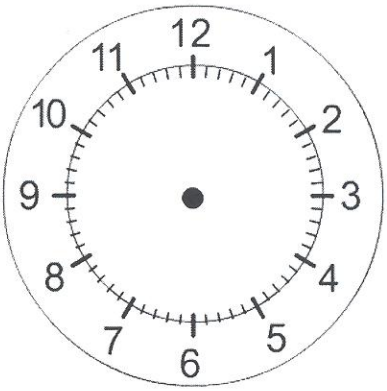
5 : 05

l)



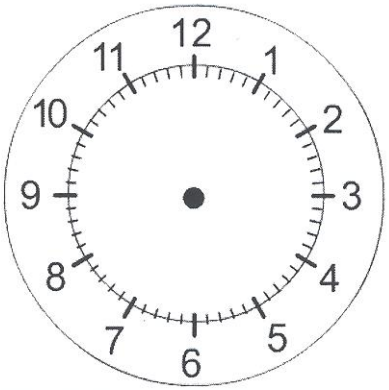
9 : 50

m)



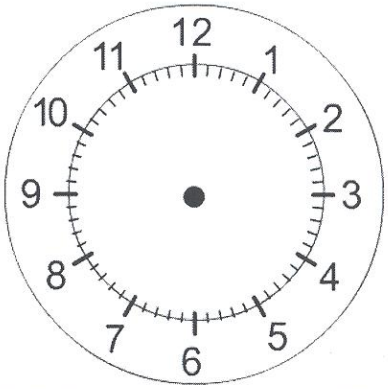
12 : 15

n)



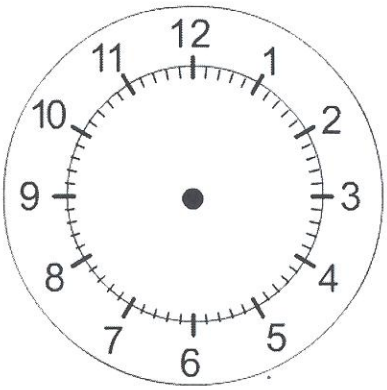
3 : 55

o)



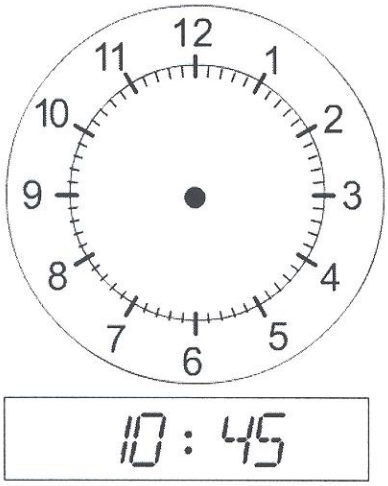
8 : 40

p)

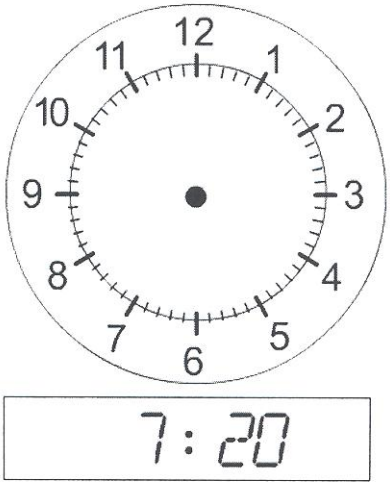


6 : 00

q)



r)



Answers to Exercise Four

a)

b)

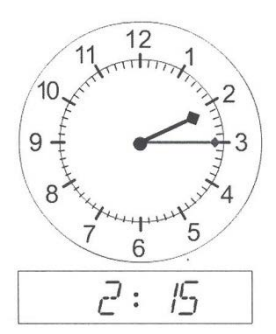
c)

d)

e)

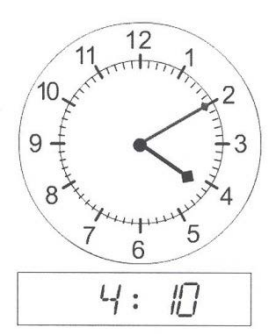
f)

g)



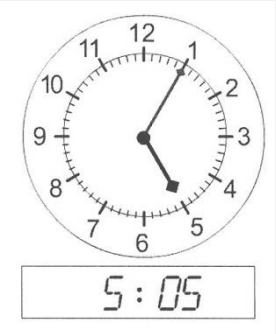
h)

i)



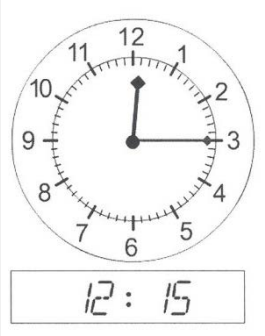
j)

k)



l)

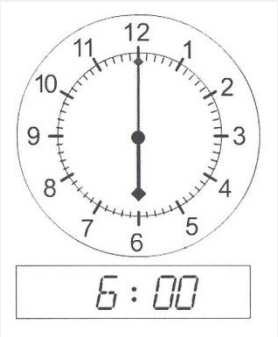
m)



n)

o)

p)



q)

r)

24-hour Clock

Your friend said she would meet you at 8:00 o'clock. Does that mean in the morning or the evening? We use a.m. and p.m. to know whether it is morning or evening.

Another way to avoid confusion is by using the **24-hour clock.** Airlines, military and health care are examples of places where the 24-hour clock is used.

With the 12-hour clock, each of the hours is repeated is a day. In the 24-hour clock, each hour in a day is counted giving us 24 hours. In the 24-hour clock, 12:00 a.m. can be written as 0000 or 2400. 0000 is the start of a new day, while 2400 is the end of the day.

We write times with 4 digits. The first two digits are the hours and the next two digits are the minutes.

12-hour clock	**24-hour clock**	**12-hour clock**	**24-hour clock**
12:00 a.m.	0000 or 2400	12:00 p.m.	1200
1:00 a.m.	0100	1:00 p.m.	1300
2:00 a.m.	0200	2:00 p.m.	1400
3:00 a.m.	0300	3:00 p.m.	1500
4:00 a.m.	0400	4:00 p.m.	1600
5:00 a.m.	0500	5:00 p.m.	1700
6:00 a.m.	0600	6:00 p.m.	1800
7:00 a.m.	0700	7:00 p.m.	1900
8:00 a.m.	0800	8:00 p.m.	2000
9:00 a.m.	0900	9:00 p.m.	2100
10:00 a.m.	1000	10:00 p.m.	2200
11:00 a.m.	1100	11:00 p.m.	2300

For example, 8:20 a.m. would be 0820, while 8:20 p.m. would be 2020.

To convert 12-hour clock to 24-hour clock, add 12 to the hour for any times after 1:00 p.m. to 11:59 p.m.

Example: **6:30 p.m.**

6:30 + 12:00 = 1830

Example: **10:30 p.m.**

10:30 + 12:00 = 2230

When writing times in 24-hour clock, we do not use a colon.

Exercise Five

Change each 12-hour clock time to 24-hour clock time. Watch carefully for a.m. and p.m. Remember: only times between 12:00 p.m. and 11:59 p.m. need to be changed. Check your work using the answer key at the end of the exercise.

a) 6:30 a.m.

b) 10:45 p.m.

c) 8:10 p.m.

d) 4:15 a.m.

e) 7:35 p.m.

f) 9:40 a.m.

g) 5:30 a.m.

h) 11:50 p.m.

i) 1:55 p.m.

j) 2:05 a.m.

k) 3:20 p.m.

l) 12:25 a.m.

Answers to Exercise Five

a) 0630	b) 2245	c) 2010	d) 0415
e) 1935	f) 0940	g) 0530	h) 2350
i) 1355	j) 0205	k) 1520	l) 0025

Exercise Five

Change each 12-hour clock time to 24-hour clock time. Watch carefully for a.m. and p.m. Remember: only times between 12:00 p.m. and 11:59 p.m. need to be changed. Check your work using the answer key at the end of the exercise.

a) 2:25 p.m.

b) 5:55 p.m.

c) 12:00 a.m.

d) 7:15 a.m.

e) 9:20 p.m.

f) 8:50 a.m.

g) 1:05 a.m.

h) 3:10 a.m.

i) 10:30 p.m.

j) 6:40 p.m.

k) 11:35 a.m.

l) 4:45 p.m.

Answers to Exercise Five

a) 1425	b) 1755	c) 0000 or 2400	d) 0715
e) 2120	f) 0850	g) 0105	h) 0310.
i) 2230	j) 1840	k) 1135	l) 1645

Exercise Six

Change each 24-hour clock time to 12-hour clock time. Watch carefully for a.m. and p.m. Check your work using the answer key at the end of the exercise.

a) 1204

b) 0822

c) 1842

d) 0425

e) 1440

f) 0910

g) 1735

h) 1605

i) 0342

j) 2305

k) 0550

l) 1330

Answers to Exercise Six

a) 12:04 p.m.	b) 8:22 a.m.	c) 6:42 p.m.	d) 4:25 a.m
e) 2:40 p.m.	f) 9:10 a.m.	g) 5:35 p.m.	h) 4:05 p.m.
i) 3:42 a.m.	j) 11:05 p.m.	k) 5:50 a.m.	l) 1:30 p.m.

Exercise Seven

Change each 24-hour clock time to 12-hour clock time. Watch carefully for a.m. and p.m. Check your work using the answer key at the end of the exercise.

a) 2155

b) 0605

c) 1115

d) 0755

e) 0235

f) 1000

g) 1510

h) 2248

i) 1253

j) 1940

k) 2025

l) 0145

Answers to Exercise Seven

a) 9:55 p.m.	b) 6:05 a.m.	c) 11:15 a.m.	d) 7:55 a.m.
e) 2:35 a.m.	f) 10:00 a.m.	g) 3:10 p.m.	h) 10:48 p.m.
i) 12:53 p.m.	j) 7:40 p.m.	k) 8:25 p.m.	l) 1:45 a.m.

Exercise Eight

Below are the ferry schedules from West Vancouver (Horseshoe Bay) to Naniamo (Departure Bay) and Vancouver (Tsawwassen) to Nanaimo (Duke Point).. Change each 12-hour clock time to 24-hour clock time. Check your work using the answer key at the end of the exercise.

Leave West Vancouver (Horseshoe Bay)		**Leave Vancouver (Tsawwassen)**	
Departs	**24-hour clock time**	**Departs**	**24-hour clock time**
6:30 a.m.		5:15 a.m.	
8:30 a.m.		7:45 a.m.	
10:30 a.m.		10:15 a.m.	
12:30 p.m.		12:45 p.m.	
3:00 p.m.		3:15 p.m.	
5:00 p.m.		5:45 p.m.	
7:00 p.m.		8:15 p.m.	
9:00 p.m.		10:45 p.m.	

Answers to Exercise Eight

Leave West Vancouver (Horseshoe Bay)		**Leave Vancouver (Tsawwassen)**	
Departs	**24-hour clock time**	**Departs**	**24-hour clock time**
6:30 a.m.	0630	5:15 a.m.	0515
8:30 a.m.	0830	7:45 a.m.	0745
10:30 a.m.	1030	10:15 a.m.	1015
12:30 p.m.	1230	12:45 p.m.	1245
3:00 p.m.	1500	3:15 p.m.	1515
5:00 p.m.	1700	5:45 p.m.	1745
7:00 p.m.	1900	8:15 p.m.	2015
9:00 p.m.	2100	10:45 p.m.	2245

Exercise Nine

Below is the flight schedule for flights from Vancouver to Montreal. Change each 24-hour clock time to 12-hour clock time. Watch carefully for a.m. and p.m. Check your work using the answer key at the end of the exercise.

Vancouver to Montreal			
Depart	**12-hour clock time**	**Arrive**	**12-hour clock time**
0850		1631	
1115		1856	
1400		2141	
1620		0001 (next day)	
2330		0710 (next day)	
Montreal to Vancouver			
Depart	**12-hour clock time**	**Arrive**	**12-hour clock time**
0810		1037	
1015		1242	
1415		1636	
1755		2022	
1955		2222	

Answers to Exercise Nine

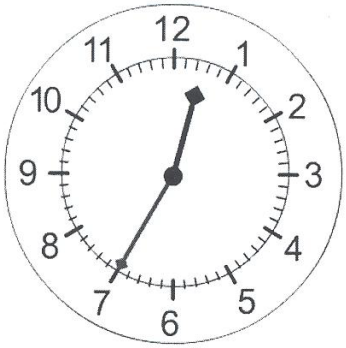
Vancouver to Montreal			
Depart	**12-hour clock time**	**Arrive**	**12-hour clock time**
0850	8:50 a.m.	1631	4:31 p.m.
1115	11:15 a.m.	1856	6:56 p.m.
1400	2:00 p.m.	2141	9:41 p.m.
1620	4:20 p.m.	0001 (next day)	12:01 a.m.
2330	11:30 p.m.	0710 (next day)	7:10 a.m.
Montreal to Vancouver			
Depart	**12-hour clock time**	**Arrive**	**12-hour clock time**
0810	8:10 a.m.	1037	10:37 a.m.
1015	10:15 a.m.	1242	12:42 p.m.
1415	2:15 p.m.	1636	4:36 p.m.
1755	5:55 p.m.	2022	8:22 p.m.
1955	7:55 p.m.	2222	10:22 p.m.

Topic C: Self-Test

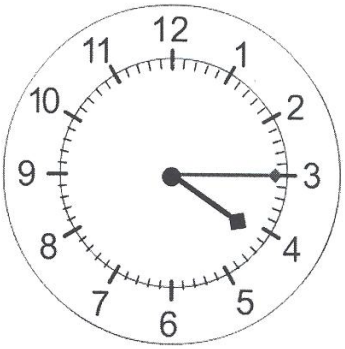
Mark /22 Aim 17/22

A. Write the time shown on each clock. **6 marks**

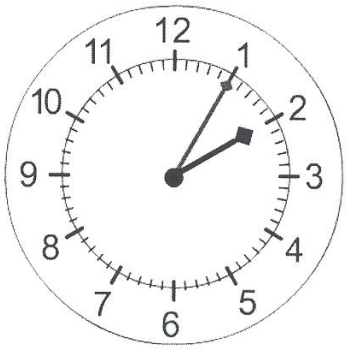
a)



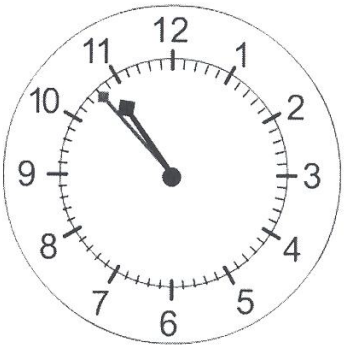
b)



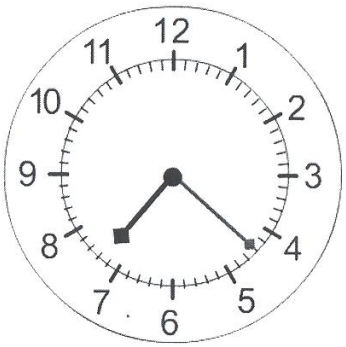
c)



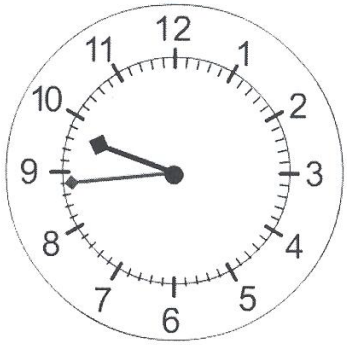
d)



e)

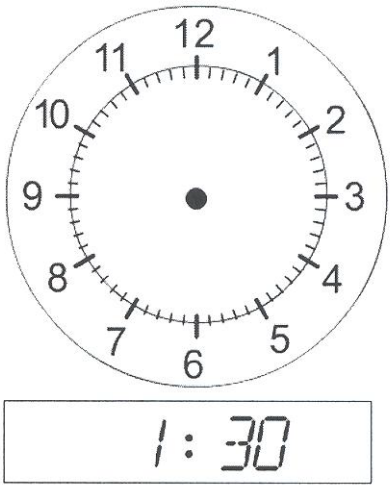


f)

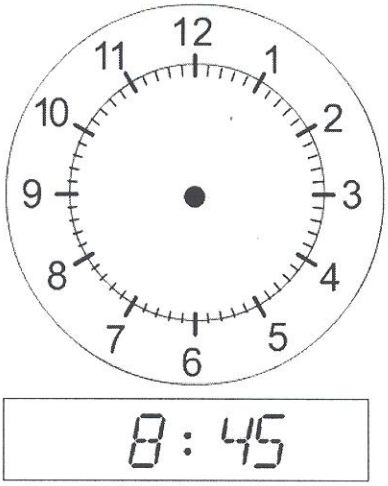


B. Under each clock is a time on a digital clock. Put the hands on the analog clock to show the digital time. **4 marks**

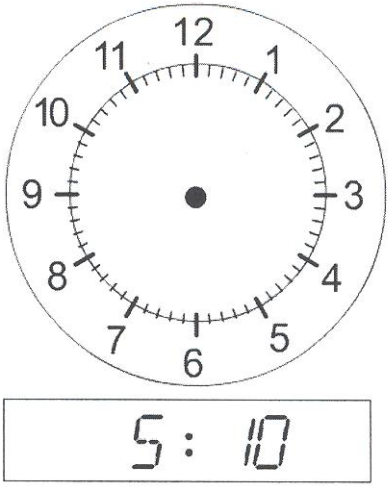
a)



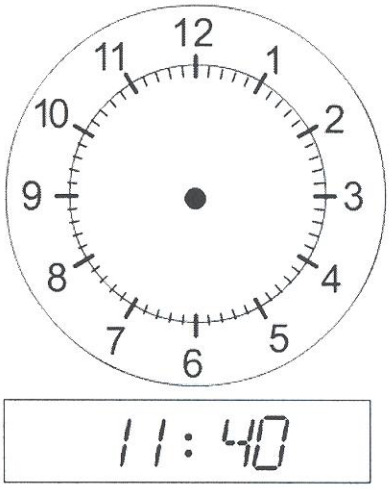
b)



c)



d)



C. Change each 12-hour clock time to 24-hour clock time. Watch carefully for a.m. and p.m. **6 marks**

a) 6:25 a.m.

b) 11:05 p.m.

c) 2:55 p.m.

d) 10:40 a.m.

e) 4:00 p.m.

f) 8:15 a.m.

D. Change each 24-hour clock time to 12-hour clock time. Watch carefully for a.m. and p.m. 6 marks

a) 0155

b) 0020

c) 1935

d) 0545

e) 1530

f) 2110

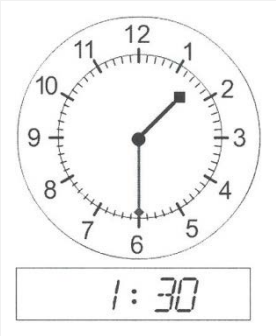
Answers to Topic C Self-Test

A.

a) 12:35 b) 4:15 c) 2:10 d) 10:53 e) 7:22 f) 9:44

B.

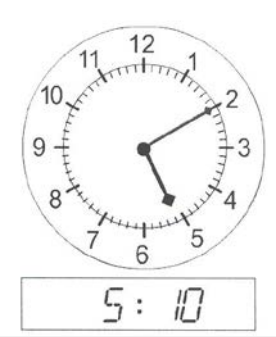
a)



b)

B.

c)



d)

C.

a) 0625 b) 2305 c) 1455 d) 1040 e) 1600 f) 0815

D.

a) 1:55 a.m. b) 12:20 a.m. c) 7:35 p.m. d) 5:45 a.m.

e) 3:30 p.m. f) 9:10 p.m.

Topic D: Adding Units of Time

Sometimes we need to add units of time to find out how much in total it will take to do some job or to travel to some other place.

To add units of time, do this:

- Place the numbers to be added in columns – minutes with minutes, hours with hours, seconds with seconds
- Add each column. Be sure to write the unit of time.

Example A:

12 h, 45 min
+ 10 h, 05 min

Step 1: **Add the minutes to the minutes**

45 min + 05 min = 50 min

12 h, 45 min
+ 10 h, 05 min
50 min

Step 2: **Add the hours to the hours**

12 h + 10 h = 22 h

12 h, 45 min
+ 10 h, 05 min
22 h

The sum of

12 h, 45 min
+ 10 h, 05 min
22h, 50 min

Example B:

4 h, 50 min, 15 s
+ 21 h, 05 min, 40 s

Step 1: **Add the seconds to the seconds.**

15 s + 40 s = 55 s

4 h, 50 min, 15 s
+ 21 h, 05 min, 40 s
55s

Step 2: **Add the minutes to the minutes**

50 min + 05 min = 55 min

4 h, 50 min, 15 s
+ 21 h, 05 min, 40 s
55 min

Step 3: **Add the hours to the hours**

4 h + 21 h = 25 h

4 h, 50 min, 15 s
+ 21 h, 05 min, 40 s
25 h

The sum of 4 h, 50 min, 15 s
+ 21 h, 05 min, 40 s
25 h, 55 min, 55 s

Exercise One

Add the times. Check your work using the answer key at the end of the exercise.

a) 3 h, 20 min
+ 5 h, 15 min

b) 11 h, 05 min
+ 4 h, 40 min

c) 9 h, 50 min
+ 14 h, 05 min

d) 2 h, 10 min
+ 6 h, 25 min

e) 7 h, 35 min
+ 12 h, 10 min

f) 10 h, 30 min
+ 8 h, 20 min

g) 1 h, 55 min, 15 s
+ 28 h, 0 min, 40 s

h) 4 h, 45 min, 05 s
+ 15 h, 10 min, 50 s

i) 7 h, 35 min, 20 s
+ 6 h, 15 min, 30 s

j) 3 h, 25 min, 45 s
+ 8 h, 30 min, 10 s

k) 3 h, 45 min, 15 s
+ 12 h, 05 min, 35 s

l) 4 h, 50 min, 30 s
+ 5 h, 0 min, 25 s

Answers to Exercise One

a) 8 h, 35 min	b) 15 h, 45 min	c) 23 h, 55 min
d) 8 h, 35 min	e) 19 h, 45 min	f) 18 h, 50 min
g) 29 h, 55 min, 55 s	h) 19 h, 55 min, 55 s	i) 13 h, 50 min, 50 s
j) 11 h, 55 min, 55 s	k) 15 h, 50 min, 50 s	l) 9 h, 50 min, 55 s

Exercise Two

Add the times. Check your work using the answer key at the end of the exercise.

a) 7 h, 17 min
+ 6 h, 28 min

b) 2 h, 32 min
+ 8 h, 11 min

c) 3 h, 41 min
+ 9 h, 08 min

d) 1 h, 53 min
+ 11 h, 05 min

e) 4 h, 38 min
+ 5 h, 20 min

f) 10 h, 47 min
+ 12 h, 02 min

g) 8 h, 57 min, 33 s
+ 9 h, 01 min, 18 s

h) 14 h, 34 min, 28 s
+ 22 h, 22 min, 19 s

i) 9 h, 14 min, 46 s
+ 15 h, 43 min, 08 s

j) 7 h, 58 min, 18 s
+ 11 h, 01 min, 32 s

k) 16 h, 24 min, 52 s
+ 8 h, 33 min, 06 s

l) 10 h, 51 min, 44 s
+ 4 h, 04 min, 12 s

Answers to Exercise Two

a)	13 h, 45 min	b)	10 h, 43 min	c)	12 h, 49 min
d)	12 h, 58 min	e)	9 h, 58 min	f)	22 h, 49 min
g)	17 h, 58 min, 51 s	h)	36 h, 56 min, 47 s	i)	24 h, 57 min, 54 s
j)	18 h, 59 min, 50 s	k)	24 h, 57 min, 58 s	l)	14 h, 55 min, 56 s

Exercise Three

Rewrite each question in columns. Be careful to write seconds under seconds, minutes under minutes and hours under hours. Check your work using the answer key at the end of the exercise.

a) Fabio worked 8 h, 48 min on his homework. The following week, he worked 9 h, 10 min on his homework. How much time in total did he work on his homework?

b) Day one of the holiday trip took 11 h, 32 min. Day two took 10 h, 26 min. How much time did we travel in two days?

c) Ajani recorded 4 h, 51 min of music. The next day, Ajani recorded 3 h, 04 min more. How much music did he have in all?

d) Cristiano finished the race in 2 hr, 30 min, 43 s. Say finished the race in 3 h, 19 min, 12 s. What is the total of their times?

e) In May, Dorian used his cell phone for 18 h, 37 min, 20 s. In June, he used his cell phone for 17 h, 22 min, 18 s. How long did he use his cell phone for the two months?

Answers to Exercise Three

a) 17 h, 58 min	b) 21 h, 58 min	c) 7 h, 58 min
d) 5 h, 49 min, 55 s	e) 35 h, 59 min, 38 s	

Subtracting Units of Time

We need to subtract units of time to find out how much time it took to do some job or to travel to some other place.

To subtract units of time, do this:

- Place the numbers to be subtracted in columns – minutes with minutes, hours with hours, seconds with seconds
- Subtract each column. Be sure to write the unit of time.

Example A:

$$\begin{array}{r} \textbf{2 h, 45 min} \\ \underline{\textbf{− 1 h, 05 min}} \end{array}$$

Step 1: **Subtract the minutes from the minutes**

45 min − 05 min = 40 min

$$\begin{array}{r} 2\text{ h, }45\text{ min} \\ \underline{-\,1\text{ h, }05\text{ min}} \\ 40\text{ min} \end{array}$$

Step 2: **Subtract the hours from the hours**

2 h − 1 h = 1 h

$$\begin{array}{r} 2\text{ h, }45\text{ min} \\ \underline{-\,1\text{ h, }05\text{ min}} \\ 1\text{ h} \end{array}$$

The difference of

$$\begin{array}{r} 2\text{ h, }45\text{ min} \\ \underline{-\,1\text{ h, }05\text{ min}} \\ \textbf{1 h, 40 min} \end{array}$$

Example B: **5 h, 45 min, 10 s**
- 2 h, 35 min, 05 s

Step 1: **Subtract the seconds from the seconds.**

10 s − 05 s = 05 s

5 h, 45 min, 10 s
− 2 h, 35 min, 05 s
05 s

Step 2: **Subtract the minutes from the minutes**

45 min − 35 min = 10 min

4 h, 45 min, 10 s
− 2 h, 35 min, 05 s
10 min

Step 3: **Subtract the hours from the hours**

5 h − 2 h = 3 h

5 h, 45 min, 10 s
− 2 h, 35 min, 05 s
3 h

The sum of 5 h, 45 min, 10 s
− 2 h, 35 min, 05 s
3 h, 10 min, 05 s

Exercise Four

Subtract the times. Check your work using the answer key at the end of the exercise.

a) 12 h, 55 min
− 3 h, 25 min

b) 9 h, 45 min
− 6 h, 10 min

c) 24 h, 50 min
− 8 h, 35 min

d) 11 h, 40 min
− 4 h, 15 min

e) 7 h, 30 min
− 5 h, 05 min

f) 12 h, 20 min
− 10 h, 05 min

g) 16 h, 45 min, 55 s
− 9 h, 25 min, 15 s

h) 17 h, 50 min, 35 s
− 8 h, 15 min, 20 s

i) 13 h, 55 min, 40 s
− 5 h, 30 min, 10 s

j) 15 h, 40 min, 50 s
− 6 h, 20 min, 25 s

k) 14 h, 50 min, 40 s
− 7 h, 35 min, 05 s

l) 28 h, 50 min, 30 s
− 9 h, 35 min, 0 s

Answers to Exercise Four

a) 9 h, 30 min	b) 3 h, 35 min	c) 16 h, 15 min
d) 7 h, 25 min	e) 2 h, 25 min	f) 2 h, 15 min
g) 7 h, 20 min, 40 s	h) 9 h, 35 min, 15 s	i) 8 h, 25 min, 30 s
j) 9 h, 20 min, 25 s	k) 7 h, 15 min, 35 s	l) 19 h, 15 min, 30 s

Exercise Five

Subtract the times. Check your work using the answer key at the end of the exercise.

a) 13 h, 48 min
− 5 h, 19 min

b) 16 h, 57 min
− 9 h, 22 min

c) 15 h, 38 min
− 5 h, 05 min

d) 19 h, 26 min
− 3 h, 17 min

e) 22 h, 43 min
− 16 h, 06 min

f) 24 h, 52 min
− 8 h, 24 min

g) 14 h, 53 min, 34 s
− 9 h, 14 min, 21 s

h) 28 h, 46 min, 59 s
− 10 h, 38 min, 18 s

i) 17 h, 32 min, 47 s
− 8 h, 08 min, 23 s

j) 25 h, 51 min, 57 s
− 17 h, 27 min, 19 s

k) 16 h, 43 min, 32 s
− 7 h, 16 min, 09 s

l) 24 h, 38 min, 48 s
− 5 h, 12 min, 07 s

Answers to Exercise Five

a)	8 h, 29 min	b)	7 h, 35 min	c)	10 h, 33 min
d)	16 h, 09 min	e)	6 h, 37 min	f)	16 h, 28 min
g)	5 h, 39 min, 13 s	h)	18 h, 08 min, 41 s	i)	9 h, 24 min, 24 s
j)	8 h, 24 min, 38 s	k)	9 h, 27 min, 23 s	l)	19 h, 26 min, 41 s

Exercise Six

Rewrite each question in columns. Be careful to write seconds under seconds, minutes under minutes and hours under hours. Check your work using the answer key at the end of the exercise.

a) Milan works 45 h, 30 min each week. He has worked 32 h, 15 min this week. How much more time can he work?

b) The trip from Vancouver to Calgary takes 17 h, 40 min on the bus. The trip from Vancouver to Kamloops takes 5 h, 05 min. How much longer must you travel to get to Calgary?

c) The flight from Vancouver to Toronto leaves at 12 h, 30 min. The flight arrives in Toronto at 15 h, 53 min. How long is the flight from Vancouver to Toronto?

d) Over two months, Lola has used her cell phone for 43 h, 37 min, 58 s. In June, she used her cell phone for 21 h, 22 min, 25 s. How much time has she used her cell phone this month?

e) During the Vancouver Marathon, the first runner crossed the finish line in 2 h, 16 min, 55 s. Another runner crossed the finish line in 4 hr, 26 min, 56 s. What is the difference in their times?

Answers to Exercise Six

a) 13 h, 15 min	b) 12 h, 35 min	c) 3 h, 23 min
d) 22 h, 15 min, 33 s	e) 2 h, 10 min, 01 s	

Topic D: Self-Test

Mark /24 Aim 19/24

A. Find the sums. **4 marks**

a)
$$\begin{array}{r} 12\text{ h, }15\text{ min} \\ \underline{+\ 4\text{ h, }35\text{ min}} \end{array}$$

b)
$$\begin{array}{r} 7\text{ h, }50\text{ min} \\ \underline{+\ 10\text{ h, }05\text{ min}} \end{array}$$

c)
$$\begin{array}{r} 11\text{ h, }40\text{ min} \\ \underline{+\ 2\text{ h, }10\text{ min}} \end{array}$$

d)
$$\begin{array}{r} 1\text{ h, }25\text{ min} \\ \underline{+\ 15\text{ h, }20\text{ min}} \end{array}$$

B. Find the sums. **4 marks**

a)
$$\begin{array}{r} 9\text{ h, }42\text{ min} \\ \underline{+\ 3\text{ h, }16\text{ min}} \end{array}$$

b)
$$\begin{array}{r} 5\text{ h, }53\text{ min} \\ \underline{+\ 8\text{ h, }02\text{ min}} \end{array}$$

c)
$$\begin{array}{r} 6\text{ h, }38\text{ min} \\ \underline{+\ 3\text{ h, }21\text{ min}} \end{array}$$

d)
$$\begin{array}{r} 22\text{ h, }33\text{ min} \\ \underline{+\ 14\text{ h, }16\text{ min}} \end{array}$$

C. Rewrite each question in columns and find the sums. **4 marks**

a) Ingrid walked the dogs for 3 h, 15 min on Monday. On Tuesday, she walked the dogs for 2 h, 40 min. Find the total time that Ingrid walked the dogs.

b) Bianca rode the bus to college for 2 h, 36 min on Wednesday. On Thursdays, the same trip took 3 h, 21 min. How long was she on the bus altogether?

D. Find the differences. **4 marks**

a)
$$\begin{array}{r} 12\text{ h, }55\text{ min} \\ \underline{-\ 4\text{ h, }35\text{ min}} \end{array}$$

b)
$$\begin{array}{r} 9\text{ h, }45\text{ min} \\ \underline{-\ 3\text{ h, }30\text{ min}} \end{array}$$

c)
$$\begin{array}{r} 11\text{ h, }50\text{ min} \\ \underline{-\ 7\text{ h, }15\text{ min}} \end{array}$$

d)
$$\begin{array}{r} 40\text{ h, }40\text{ min} \\ \underline{-\ 15\text{ h, }05\text{ min}} \end{array}$$

E. Find the differences. **4 marks**

a)
$$\begin{array}{r} 8\text{ h, }58\text{ min} \\ \underline{-\ 6\text{ h, }34\text{ min}} \end{array}$$

b)
$$\begin{array}{r} 14\text{ h, }47\text{ min} \\ \underline{-\ 5\text{ h, }29\text{ min}} \end{array}$$

c)
$$\begin{array}{r} 11\text{ h, }36\text{ min} \\ \underline{-\ 2\text{ h, }18\text{ min}} \end{array}$$

d)
$$\begin{array}{r} 18\text{ h, }41\text{ min} \\ \underline{-\ 9\text{ h, }26\text{ min}} \end{array}$$

F. Rewrite each question in columns and find the sums. 4 marks

a) During rush hour, it took Marco 2 h, 51 min to drive home. During non-rush hour, it took Marco 1 h, 48 min to drive home. Find the difference.

b) Kade and Amia left from the Kelowna at the same time. Kade took 5 h, 37 min to drive home. Amia took 4 h, 29 min to drive home. Find the difference.

Answers to Topic D Self-Test

A.

a) 16 h, 50 min b) 17 h, 55 min c) 13 h, 50 min d) 16 h, 45 min

B.

a) 12 h, 58 min b) 13 h, 55 min c) 9 h, 59 min d) 36 h, 49 min

C.

a) 5 h, 55 min b) 5 h, 57 min

D.

a) 8 h, 20 min b) 6 h, 15 min c) 4 h, 35 min d) 25 h, 35 min

E.

a) 2 h, 24 min b) 9 h, 18 min c) 9 h, 18 min d) 9 h, 15 min

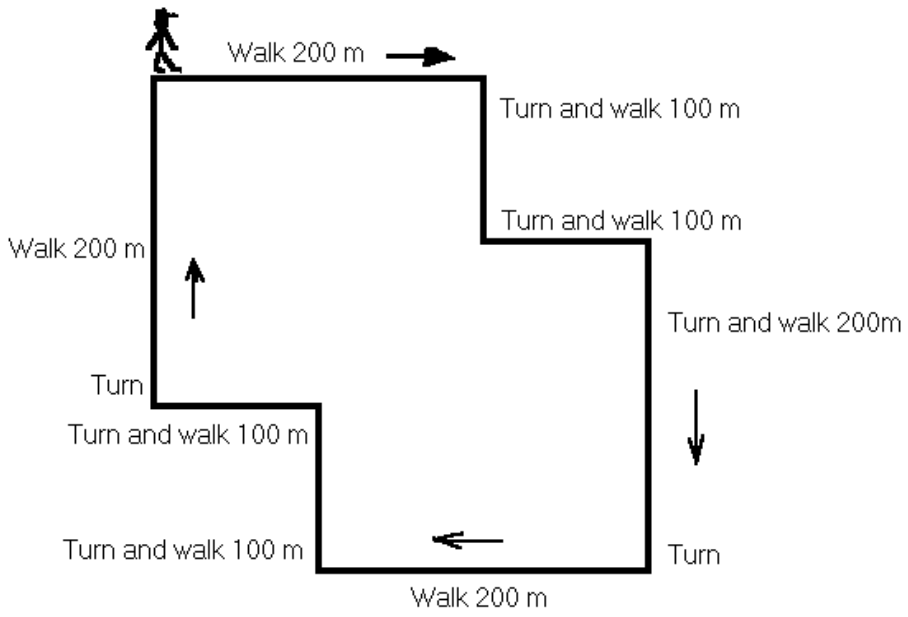
F.

a) 1 h, 03 min b) 1 h, 08 min

Topic E: Perimeter

Perimeter is from the Greek language. **Peri** means "around". Perimeter is the distance **around** something. If you walked around the outside of your building, you would have walked close to the perimeter of the building. (The actual perimeter would be the outside wall which is a little tricky to walk on!) A fence around a field is *at the perimeter* of the field. In this sense, we are using perimeter to mean "the outside edge". The length of the entire fence is the measure of the perimeter.

Example A: Picture yourself going for a walk, starting at the door of your building.

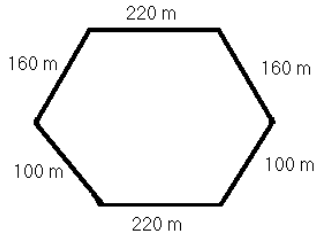


Your walk was in the shape of an octagon. How far did you walk?

When you add together all the distances, you get 1 200 m.

You have just found the perimeter of an octagon.

Example B: The new memorial park was built in an interesting shape. The park is a hexagon. A walking path goes around the perimeter of the park. How long is the path?



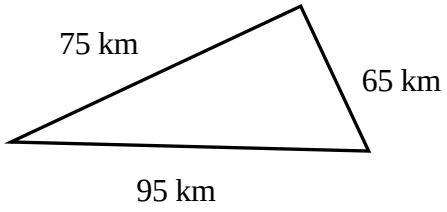
Add the measure of each side of the park. The perimeter of this hexagon is 960 m.

> To find the perimeter of a polygon, add the lengths of all the sides together.

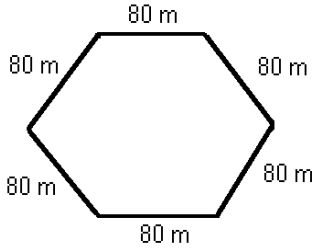
Exercise One

Find the perimeter of each figure. Be sure to include the units of measure in your answer. Check your work using the answer key at the end of the exercise.

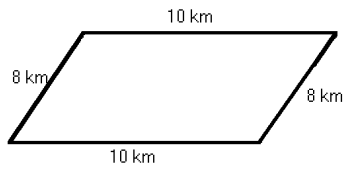
a)



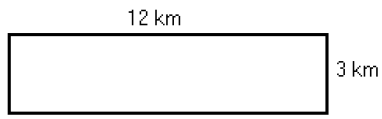
b)



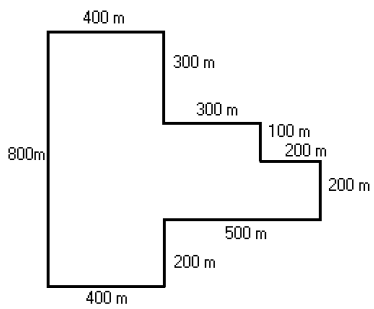
c)



d)

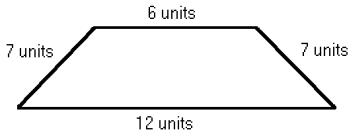


e)

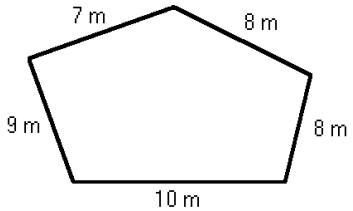


Remember that the opposite sides of a rectangle are congruent (have the same measure) and all four sides of a square are congruent.

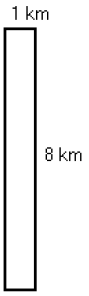
f)



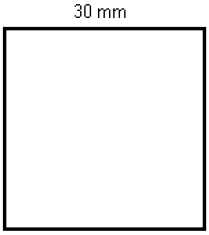
g)



h)



i)



Answers to Exercise One

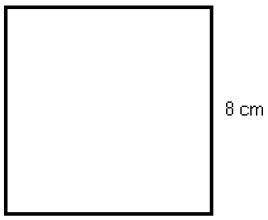
a) 235 metres	b) 480 metres	c) 36 kilometres
d) 30 kilometres	e) 3 400 kilometres	f) 32 units
g) 42 metres	h) 18 kilometres	i) 120 millimetres

Finding the Perimeter of a Square

Write the definition of a square.

By definition then, a square has four sides that are all congruent (have the same measure).

To find the perimeter you can add the four sides.



Perimeter =
8 cm + 8 cm + 8 cm + 8 cm = 32 cm

Exercise Two

Find the perimeter of the **squares** described in each question. The measure of one side has been given. Be sure to include the units of measure in your answer. Check your work using the answer key at the end of the exercise.

a) s = 75 m
$P = 75\ m + 75\ m + 75\ m + 75\ m$
P = _____

b) s = 12 mm

P =

c) s = 100 km

P = _____

d) s = 50 cm

P =

e) $s = 130$ m

$P =$ _____

f) $s = 1\ 000$ km

$P =$

g) $s = 165$ m

$P =$ _____

h) $s = 325$ m

$P =$

i) $s = 68$ cm

$P =$ _____

j) $s = 85$ mm

$P =$

Answers to Exercise Two

a) 300 metres	b) 48 millimetres	c) 400 kilometres
d) 200 centimetres	e) 520 metres	f) 4 000 kilometres
g) 660 metres	h) 1300 metres	i) 272 centimetres
j) 340 millimetres		

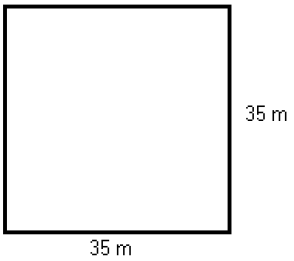
Problems using the Perimeters of Squares

Example A: Ted needs to build a fence around his swimming pool. The swimming pool with its deck is a square shape that measures 35 m per side. How much fencing must Ted buy?

Step 1: Question.
How much fencing must Ted buy?

Step 2: Find the needed information—drawing a sketch is often helpful.

- fence around a square pool
  s = 35 m



Step 3: Operations
The fence is a perimeter, so find the perimeter of a square.
P = 35 m + 35 m + 35 m + 35 m
P = 140 m of fence

Ted must buy 140 m of fencing.

Exercise Three

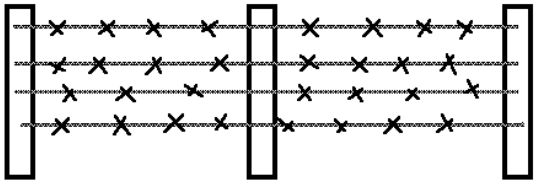
Solve these problems using perimeters of squares. The problems may need two operations. Be sure to include the units of measure in your answer. Check your work using the answer key at the end of the exercise.

a) The campground security officer walks around the outside of the campground four times every evening. The campground is 800 m square. How far does the officer walk in these patrols each night?
Note: *800 m square* is a common way of saying "a square with sides that measure 800 m."

b) Lee is going to install base boards in the recreation room he has built in his basement. The room is five metres square. The baseboard material is expensive, so he will be sure to deduct 1 m for each of the two doorways. How much baseboard material does he need to buy?

c) Phil is going to fence his large 50 m square vegetable garden to keep the deer out. The fence will be made with four strands of barbed wire. How much barbed wire should Phil buy?

The fence will look like this:



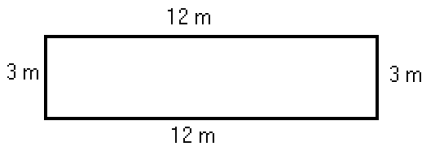
Answers to Exercise Three

a) 12 800 metres b) 18 metres c) 800 metres

Finding the Perimeter of a Rectangle

Write the definition of a rectangle.

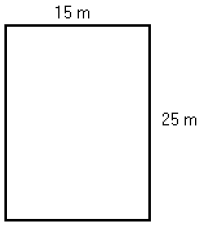
Example A:



length (l) = 12 m
width (w) = 3 m

To find the perimeter you can find the sum of
12 m + 3 m + 12 m + 3 m = 30 m

Example B: Find the perimeter of a rectangle 25 m long and 15 m wide.



P = 15 m + 25 m + 15 m + 25 m
= 80 m

Exercise Four

Find the perimeter of the **rectangles** described below. Draw and label a sketch for each. Be sure to include the units of measure in your answer. Check your work using the answer key at the end of the exercise.

a) l = 10 cm
w = 6 cm
P = _____

b) l = 100 km
w = 70 km
P =

c) l = 15 mm
w = 10 mm
P = _____

d) l = 97 cm
w = 35 cm
P =

e) l = 400 km
w = 100 km
P = _____

f) l = 42 m
w = 67 m
P = _____

g) l = 132 m
w = 76 m
P = _____

h) l = 196 cm
w = 28 cm
P = _____

Answers to Exercise Four

a) 32 centimetres	b) 340 kilometres	c) 50 millimetres
d) 264 centimetres	e) 1 000 kilometres	f) 218 metres
g) 416 metres	h) 448 centimetres	

Problems using Perimeters of Rectangles

Exercise Five

Solve these problems. Draw and label a sketch for each. Be sure to include the units of measure in your answer. Check your work using the answer key at the end of the exercise.

a) Janice plans to sew lace on the edge of a tablecloth that is 132 cm in width and 218 cm long. How much lace does she need?

b) One physical education teacher starts each class by having everyone jog around the school 4 times. The school is rectangular (shaped like a rectangle) and 160 m long and 95 m wide. About how far do the students jog each class?
Note: *160 m long and 95 m wide* may be written as "160 m by 95 m".

c) How many metres of baseboard are needed for a rectangular room 4 m by 3 m? Deduct 1 m for each of the two doorways.

d) Dennis likes to cycle 30 km daily around a cycle path at a local park. The park is rectangular and measures 3 km in width and 5 km in length. How far does Dennis cycle if he rides around the park twice?

e) Calculate the total amount of weather-stripping needed to go around these windows in a house.

3 windows each measuring 76 cm by 122 cm
2 windows each measuring 152 cm by 135 cm

f) The Nuoris are going to replace the fascia board (the trim at the edge of a roof) with new pressure-treated cedar board. Their flat roof is 14 m by 12 m. How much fascia board is needed?

Answers to Exercise Five

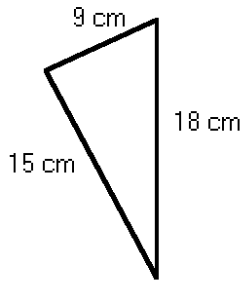
a) 700 centimetres	b) 2 040 metres	c) 12 metres
d) 32 kilometres	e) 2 336 centimetres	f) 52 metres

Topic E: Self-Test

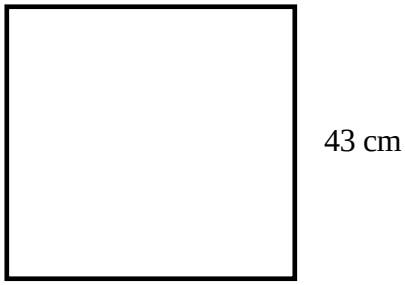
Mark /6 Aim 5/6

A. Find the perimeter of each shape. **4 marks**

a)

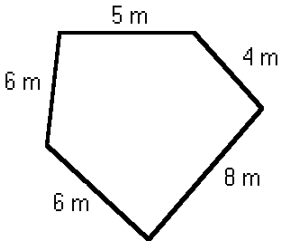


b)



c)

d)



B. Word Problems. Draw and label a sketch for each. Be sure to include the units of measure in your answer. 2 marks

a) How much chrome edging will Juanita need for a kitchen table 121 cm square?

b) Than is going to frame a fabulous poster that is 100 cm by 70 cm. How much framing material should he buy?

Answers to Topic E Self-Test

A.

a) 42 centimetres b) 172 centimetres c) 84 kilometres d) 29 metres

B.

a) 484 centimetres b) 340 centimetres

Unit 5 Review – Making Change and Time

You will now practice all the skills you learned in Unit 5. Check your work using the answer key at the end of the review.

A. Circle the number of coins you would need to get from the first number to the second number. Make sure to use the least number of coins you can.

a) 37¢ to 40¢

b) 85¢ to 90¢

c) 60¢ to 70¢

d) 25¢ to 50¢

B. State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible.

a) 58¢ to 60¢

b) 95¢ to $1.00

c) 15¢ to 25¢

d) 75¢ to $1.00

C. State the number and kind of coins you would need to get from the first number to the second number. Make sure you use the least number of coins as possible.

a) 18¢ to 25¢

b) 67¢ to 75¢

c) 35¢ to 75¢

d) 29¢ to 50¢

D. State the number and kind of coins you would need to get change from $1.00. Make sure you use the least number of coins as possible.

a) 40¢

b) 56¢

c) 19¢

d) 83¢

e) 33¢

f) 65¢

g) 2 apples cost 76¢

h) a pen costs 92¢

i) a doughnut costs 73¢

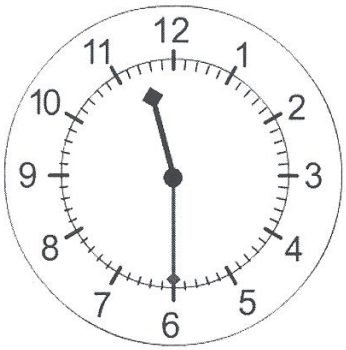
j) a ruler costs 29¢

k) Mrs. Low bought 3 lemons for 89¢. How much change will she get back from $1.00?

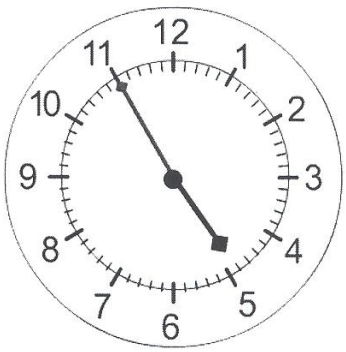
l) Mr. Garcia bought a can of peaches for 67¢. How much change will he get back from $1.00?

E. Write the time shown on each clock.

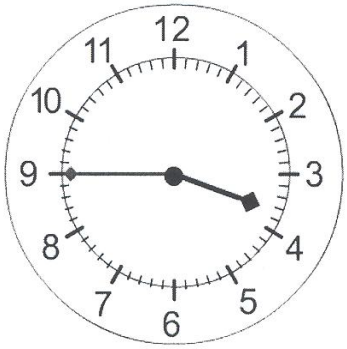
a)



b)



c)


12
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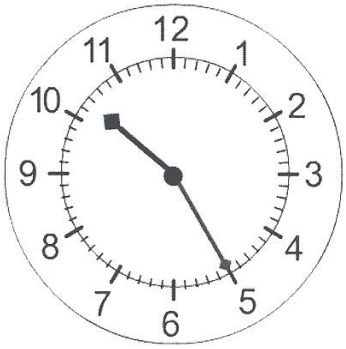
11

d)


12
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3
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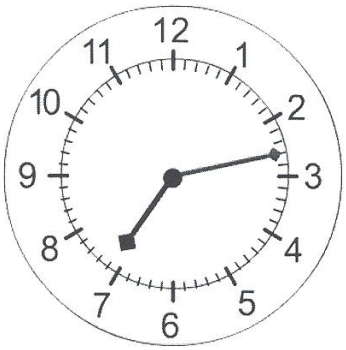
11

e)


12
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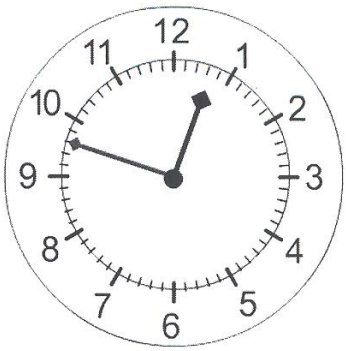
11

f)


12
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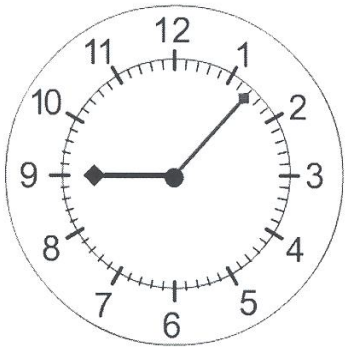
g)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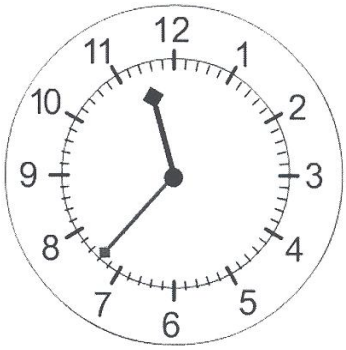
h)


12
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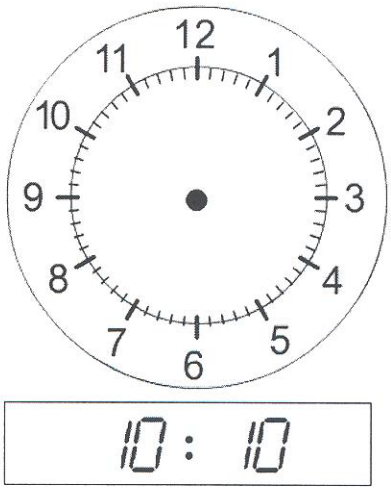
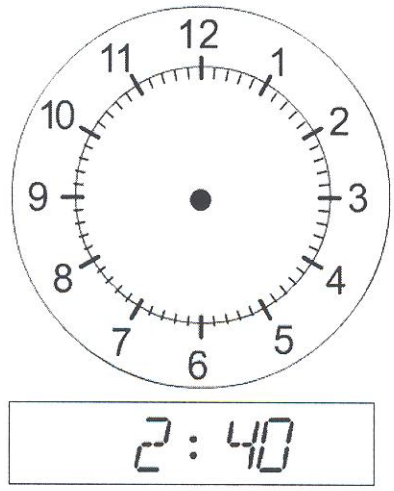
11

F. Under each clock is a time on a digital clock. Put the hands on the analog clock to show the digital time.

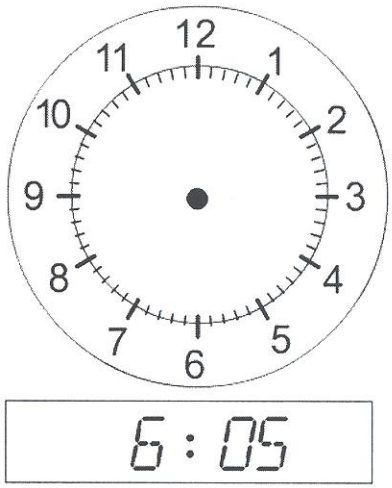
a)



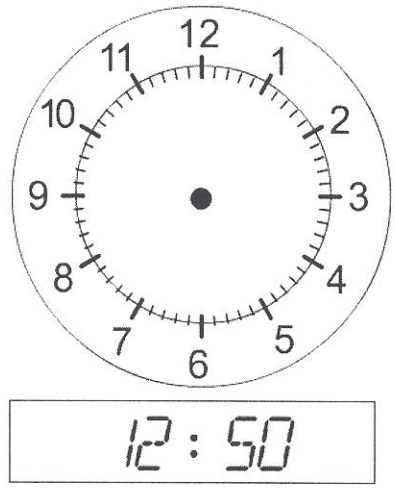
b)



c)



d)



G. Change each 12-hour clock time to 24-hour clock time. Watch carefully for a.m. and p.m. Remember: only times between 1:00 p.m. and 11:59 p.m. need to be changed.

a) 6:48 a.m.

b) 9:56 p.m.

c) 7:45 p.m. d) 5:30 a.m.

e) 11:17 p.m. f) 10:08 a.m.

H. Change each 12-hour clock time to 24-hour clock time. Watch carefully for a.m. and p.m. Remember: only times between 1:00 p.m. and 11:59 p.m. need to be changed.

a) 2115 b) 0718

c) 1326 d) 1142

e) 1830 f) 0145

I. Add the times.

a)
$$\begin{array}{r} 6\text{ h, }40\text{ min} \\ \underline{+\ 3\text{ h, }10\text{ min}} \end{array}$$

b)
$$\begin{array}{r} 4\text{ h, }20\text{ min} \\ \underline{+\ 8\text{ h, }15\text{ min}} \end{array}$$

c)
$$\begin{array}{r} 8\text{ h, }42\text{ min} \\ \underline{+\ 6\text{ h, }15\text{ min}} \end{array}$$

d)
$$\begin{array}{r} 7\text{ h, }36\text{ min} \\ \underline{+\ 9\text{ h, }22\text{ min}} \end{array}$$

e) 4 h, 15 min
+ 7 h, 29 min

f) 5 h, 36 min
+ 9 h, 17 min

g) 2 h, 43 min, 35 s
+ 5 h, 11 min, 22 s

h) 6 h, 24 min, 43 s
+ 9 h, 28 min, 08 s

i) The first soccer game took 2 h, 32 min to complete. The second soccer game took 3 h, 19 min. How long did both games take?

j) The first cross-country skier completed the race in 2 h, 05 min, 37 s. The second skier completed the race in 2 h, 06 min, 18 s. What is the total time?

J. Subtract the times.

g) 6 h, 45 min
− 3 h, 20 min

b) 8 h, 50 min
− 4 h, 15 min

c) 16 h, 58 mind)
− 7 h, 27 min

d) 11 h, 47 min
− 2 h, 13 min min

e) 17 h, 42 min f)
− 9 h, 18 min

f) 13 h, 51 min
− 8 h, 37 min

g) 14 h, 32 min, 41 s
− 5 h, 26 min, 39 s

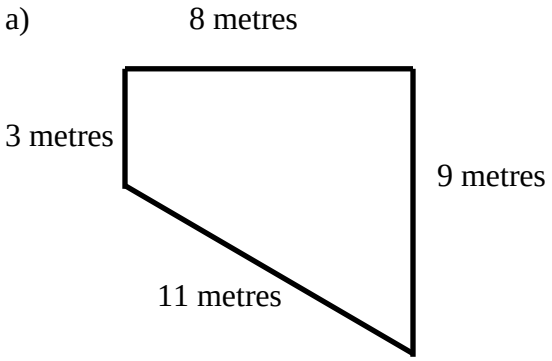
h) 18 h, 47 min, 36 s
− 9 h, 19 min, 19 s

i) The first cross country skier to finished the race in 1 h, 34 min, 04 s. The next cross country skier finished the race in 1 h, 42 min, 33 s. What is the difference in their times?

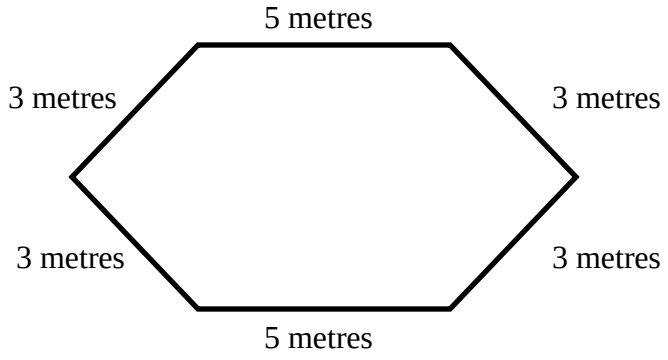
j) It takes 2 h, 20 min to travel from London to Paris on the train. It takes 8 h, 55 min to travel from London to Paris by both ferry and train. How much longer does it take by ferry and train?

K. Find the perimeter of the shape. Be sure to put the unit of measure in your answer.

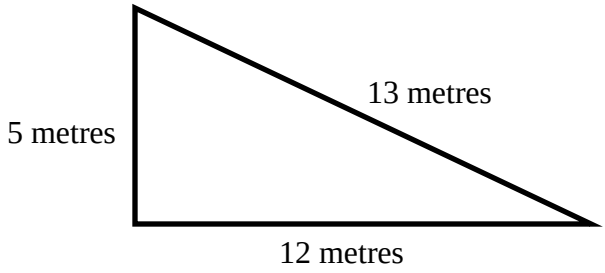
a)



b)



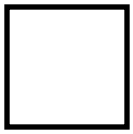
c)



L. Find the perimeter of each square. Be sure to include the unit of measure in your answer.

a) 6 kilometres

b)

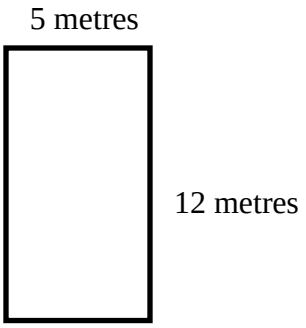


13 centimetres

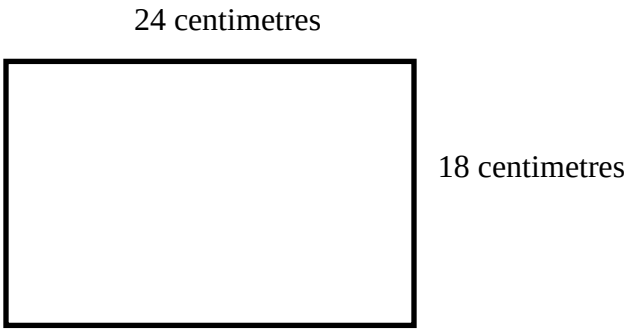
c) Chung is putting new fencing around his square swimming pool. The length of side is 30 metres. How much fencing will Chung need?

M. Find the perimeter of each rectangle. Be sure to include the unit of measure in your answer.

a)



b)



c) Say Han is decorating a rectangular birthday that measures 61 centimetres by 31 centimetres. He wants to put an icing decoration around the cake. What is the perimeter of the cake?

Answers to Unit 5 Review

A.

a) 3 pennies b) 1 nickel c) 1 dime d) 1 quarter

B.

a) 2 pennies b) 1 nickel c) 1 dime d) 1 quarter

C.

a) 2 pennies, 1 nickel b) 3 pennies, 1 nickel c) 1 nickel, 1 dime, 1 quarter
d) 1 penny, 2 dimes

D.

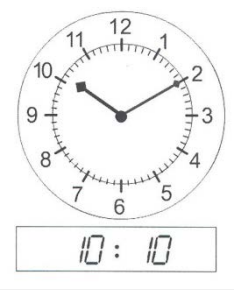
a) 1 dime, 2 quarters
b) 4 pennies, 1 nickel, 1 dime, 1 quarter
c) 1 penny, 1 nickel, 3 quarters
d) 2 pennies, 1 nickel, 1 dime
e) 2 pennies, 1 nickel, 1 dime, 2 quarters
f) 1 dime, 1 quarter
g) 4 pennies, 2 dimes
h) 3 pennies, 1 nickel
i) 2 pennies, 1 quarter
j) 1 penny, 2 dimes, 2 quarters
k) 1 penny, 1 dime
l) 3 pennies, 1 nickel, 1 quarter

E.

a) 11:30 b) 4:55 c) 3:45 d) 10:25 e) 7:13
f) 12:48 g) 9:12 h) 11:37

F.

a)



b)

c)

d)

G.

a) 0648 b) 2156 c) 1945 d) 0530
e) 2317 f) 1008

H.

a) 9:15 p.m. b) 7:18 a.m. c) 1:26 p.m. d) 11:42 a.m.
e) 6:30 p.m. f) 1:45 a.m.

I.

a) 9 h, 50 min b) 12 h, 35 min c) 14 h, 57 min d) 16 h, 58 min
e) 11 h, 44 min f) 14 h, 53 min g) 7 h, 54 min, 57 s h) 15 h, 52 min, 51 s
i) 5 h, 51 min j) 4 h, 11 min, 55 s

J.

a) 3 h, 25 min b) 4 h, 35 min c) 9 h, 31 min d) 9 h, 34 min
e) 8 h, 24 min f) 5 h, 14 min g) 9 h, 06 min, 02 s
h) 9 h, 28 min, 17 s i) 8 min, 29 s j) 6 h, 35 min

K.

a) 31 metres b) 22 metres c) 30 metres

L.

a) 24 kilometres b) 52 centimetres c) 120 metres

M.

a) 34 metres b) 84 centimetres c) 184 centimetres

CONGRATULATIONS!!

Now you have finished Unit 5.

TEST TIME!

Ask your instructor for the Practice Test for this unit.
Once you've done the practice test,
you need to do the unit 4 test.
Again, ask your instructor for this.
Good luck!