

# Carlingford High School



## Mathematics Year 7 Term 1 Test 2017

Name: \_\_\_\_\_

Circle your class below.

Class:      **7C**      **7A**      **7R**      **7L**      **7I**      **7N**      **7G**

*Time allowed: 55 minutes*

- NO Calculators allowed.
- Complete the examination in blue or black pen.
- Show all necessary working.
- Attempt all questions.
- Extension questions are marked with an asterisk \*.

	Integers	Angles	Total	
Questions	/33	/34		
Extension	/6	/10	/16	
Total	/39	/44	/83	%

## Computation with Integers

1. Fill in the blanks in the following sentences using correct spelling: a. Integers are _____ numbers. They can be _____, _____ or _____. b. Ascending order means from _____ to _____. The opposite is _____ order.	(4) (3) (1)	d. $-15 - (-1) =$	(1)
2. Which of the following are integers? Circle the correct answer/s. $-2\frac{1}{2}$ , 0.45, 0, -201, 4%	(4)	e. $-5 - 3 =$	(1)
3. Complete each statement by inserting the correct symbol $>$ , $<$ or $=$ a. $-6$ _____ $-2$ b. $7$ _____ $-7$ c. $0$ _____ $-5$ d. $-100$ _____ $9$	(1)	f. $17 - (-9) =$	(1)
4. What number is the opposite of 5?	(1)	g. $-6 \times 7 =$	(1)
5. Arrange the following numbers in descending order; -3, 2, 0, -15, 7	(1)	h. $-2 \times (-5) =$	(1)
6. Increase -5 by 11.	(1)	i. $(-8)^2 =$	(1)
7. Evaluate the following expressions: a. $-12 + 7 =$ b. $-9 + (-8) =$ c. $18 + (-10) =$	(1) (1) (1)	j. $-36 \div 3 =$	(1)
		k. $-21 \div (-7) =$	(1)
		l. $45 \div (-9) =$	(1)
		m. $\frac{-18}{-2} =$	(1)
		n. $10 - 6 \times 4 =$	(1)
		* o. $54 \div 9 - 8 \times 2 =$	(2)
		* p. $-3 \times (-5) - (-6) \times 2 =$	(2)

8. True or False $-1 \times -8 \div (-4 + 6) = 4$ ?	(1)	* 11. The time in Sydney is always 3 hours ahead of Singapore time, and Singapore is always 5 hours behind Wellington, which is 12 hours ahead of London. What is the time difference between Sydney and London.	(2)
9. A submarine 110m below the surface of the water rises 80m, then dives 150m. Where is it now?	(1)		
10. Two numbers have a product of 12 but their sum is $-7$ . What are the two numbers?	(2)		

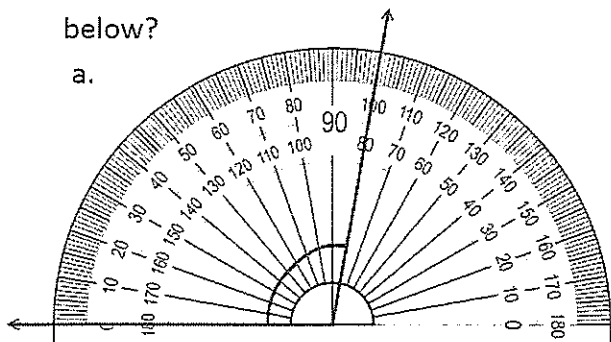
## Angle Relationships

1. Fill in the missing words to make true sentences. Use correct spelling.
  - a. When two \_\_\_\_\_ meet at a point, an angle is formed.
  - b. The point where the lines meet is called a \_\_\_\_\_.
  - c. Angles are measured in \_\_\_\_\_ using a \_\_\_\_\_.
  - d. \_\_\_\_\_ angles add up to  $90^\circ$ .

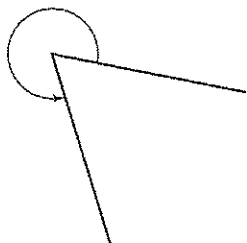
2. Using a ruler, draw an acute angle  $\angle ADG$ .

3. What is the size of the indicated angles below?

a.



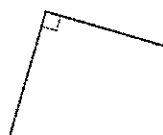
b.



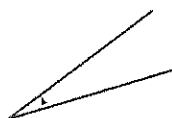
4. Use a protractor to draw an angle of  $25^\circ$ .

5. Classify each of the following angles:

a.



b.



c.

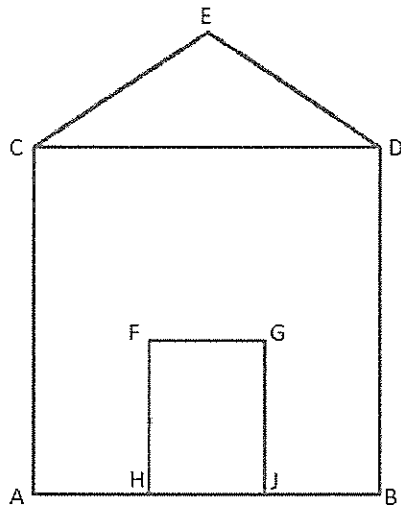


d.



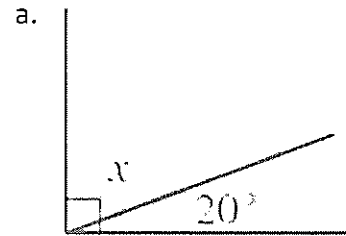
- e. An angle of  $154^\circ$

6. Use the simple diagram of a house below to answer these questions:

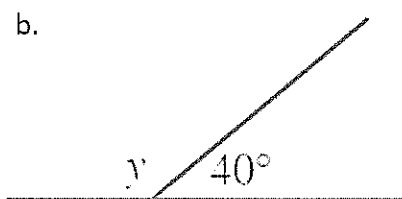


- a. Name one acute angle (1)
- b. Name one right angle (1)
- c. Name one obtuse angle (1)
- d. Name a pair of adjacent angles (1)  
and
- e. Name one set of parallel lines (1)  
and
- f. Name one set of perpendicular lines (1)  
and

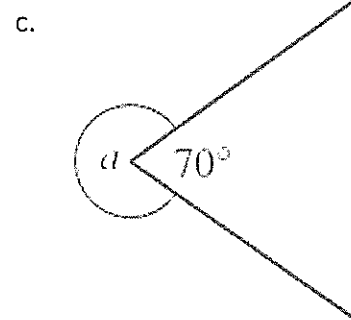
7. Find the value of the missing pronumerals in each of the following angles. Show your working and give reasons for all your answers.



(2)

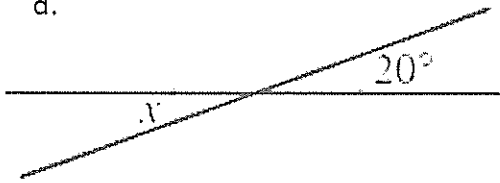


(2)



(2)

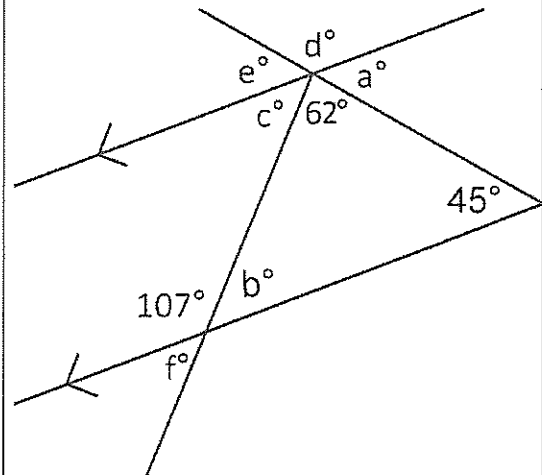
d.



(2)

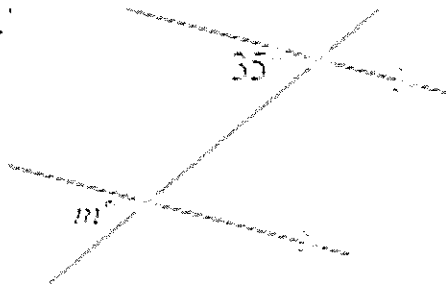
\* g. No reasons necessary.

(6)



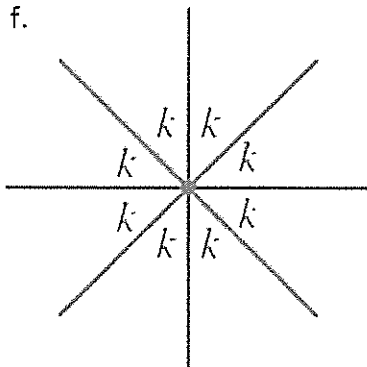
(2)

e.



(2)

\* f.

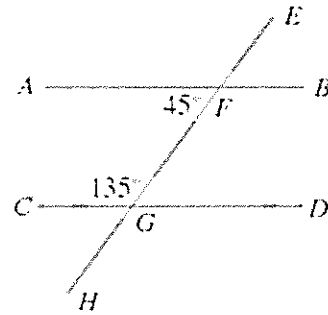


- \* 8. Julia is seated in a Ferris wheel which makes one full revolution in 1 minute. Through what angle does Julia travel in 25 seconds?

(2)

9. Is AB parallel to CD? Give a reason for your answer.

(2)



**END OF EXAM**





# Carlingford High School



## Mathematics Year 7 Term 1 Test 2017

Name: SOLUTIONS

Circle your class below.

Class:      7C          7A          7R          7L          7I          7N          7G

*Time allowed: 55 minutes*

- NO Calculators allowed.
- Complete the examination in blue or black pen.
- Show all necessary working.
- Attempt all questions.
- Extension questions are marked with an asterisk \*.

	Integers	Angles	Total	
Questions	/33	/34		
Extension	/6	/10	/16	
Total	/39	/44	/83	%

## Computation with Integers

1. Fill in the blanks in the following sentences using correct spelling:

- a. Integers are whole numbers.  
They can be positive, negative or zero.
- b. Ascending order means from smallest to largest.  
The opposite is descending order.

2. Which of the following are integers?  
Circle the correct answer/s.

$-2\frac{1}{2}$ , 0.45, 0, -201, 4%

3. Complete each statement by inserting the correct symbol  $>$ ,  $<$  or  $=$

a.  $-6$   $<$   $-2$

b.  $7$   $>$   $-7$

c.  $0$   $>$   $-5$

d.  $-100$   $<$   $9$

4. What number is the opposite of 5?

$-5$

5. Arrange the following numbers in descending order;

$-3$ ,  $2$ ,  $0$ ,  $-15$ ,  $7$

$7, 2, 0, -3, -15$

6. Increase  $-5$  by 11.

$= -5 + 11$

$= 6$

7. Evaluate the following expressions:

a.  $-12 + 7 =$   $-5$

b.  $-9 + (-8) =$   $-17$

c.  $18 + (-10) =$   $8$

d.  $-15 - (-1) =$   $-14$

e.  $-5 - 3 =$   $-8$

f.  $17 - (-9) =$   $26$

g.  $-6 \times 7 =$   $-42$

h.  $-2 \times (-5) =$   $10$

i.  $(-8)^2 =$   $64$   
 $-8 \times -8$

j.  $-36 \div 3 =$   $-12$

k.  $-21 \div (-7) =$   $3$

l.  $45 \div (-9) =$   $-5$

m.  $\frac{-18}{-2} =$   $9$

n.  $10 - (6 \times 4) =$   $10 - 24$   
 $= -14$

\* o.  $(54 \div 9) - (8 \times 2) =$   $6 - 16$   
 $= -10$

\* p.  $(-3 \times (-5)) - ((-6) \times 2) =$   
 $= 15 - 12$   
 $= 3$

8. True or False

$$-1 \times -8 \div (-4 + 6) = 4?$$

$$= -1 \times -8 \div 2$$

$$= -1 \times -4$$

$$= 4$$

True

9. A submarine 110m below the surface of the water rises 80m, then dives 150m. Where is it now?

$$= -110 + 80 - 150$$

$$= -180$$

It is 180m below the water

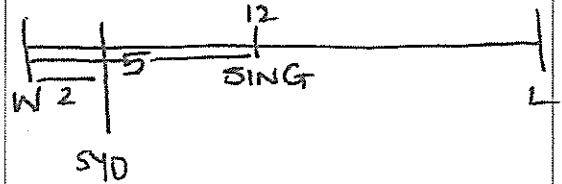
10. Two numbers have a product of 12 but their sum is  $-7$ . What are the two numbers?

$-4$  and  $-3$

(1)

\* 11. The time in Sydney is always 3 hours ahead of Singapore time, and Singapore is always 5 hours behind Wellington, which is 12 hours ahead of London. What is the time difference between Sydney and London.

(1)



Sydney and London are 10 hours difference.

(2)

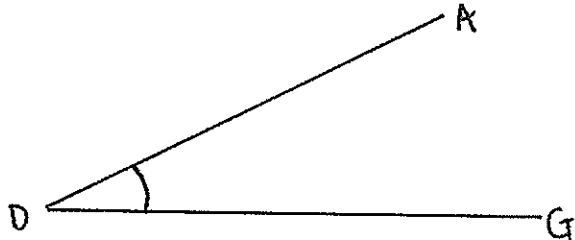
(2)

## Angle Relationships

1. Fill in the missing words to make true sentences. Use correct spelling.

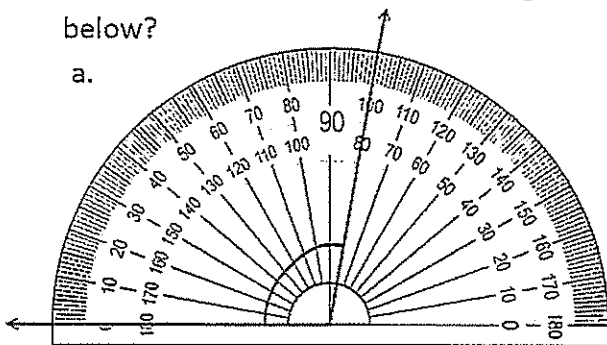
- When two arms meet at a point, an angle is formed.
- The point where the lines meet is called a vertex.
- Angles are measured in degrees using a protractor.
- Complementary angles add up to  $90^\circ$ .

2. Using a ruler, draw an acute angle  $\angle ADG$ .



3. What is the size of the indicated angles below?

a.



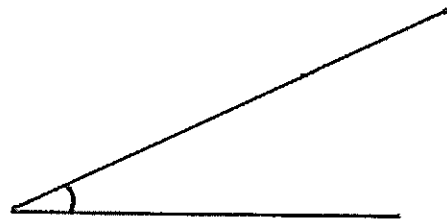
$100^\circ$

b.



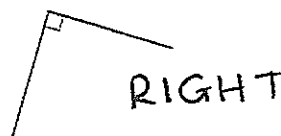
$$\therefore 360 - 62 = 298^\circ$$

4. Use a protractor to draw an angle of  $25^\circ$ .

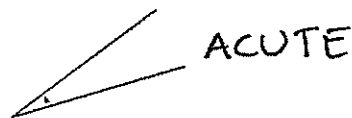


5. Classify each of the following angles:

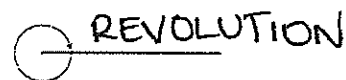
a.



b.



c.

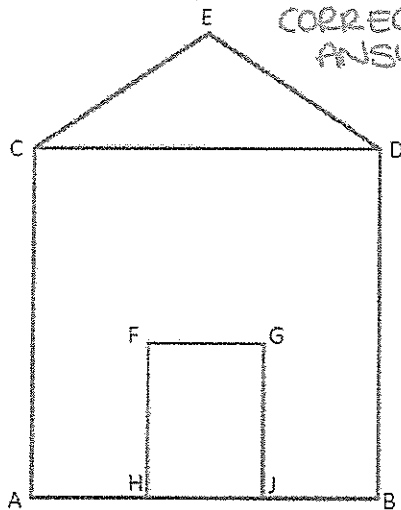


d.



e. An angle of  $154^\circ$   
**OBTUSE**

6. Use the simple diagram of a house below to answer these questions: **ANY CORRECT ANSWER**



a. Name one acute angle  
 $\angle ECD, \angle DCE, \angle EDC, \angle CDE$

b. Name one right angle  
 $\angle A, \angle H, \angle F, \angle G, \angle J, \angle B, \angle DCA, \angle ACD, \angle CDB, \angle BDC$  (NOT  $\angle C$  or  $\angle D$ )

c. Name one obtuse angle  
 $\angle E, \angle DEC, \angle CED, \angle ECA, \angle ACE, \angle EDB, \angle BDE$

d. Name a pair of adjacent angles  
 $\angle ECD$  and  $\angle DCA$   
 $\angle EDC$  and  $\angle CDB$

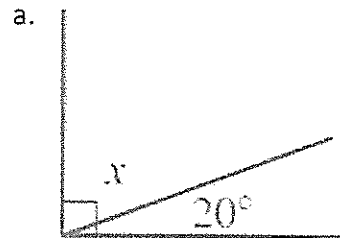
e. Name one set of parallel lines

$CD$  and  $AB$   
 $CA$  and  $DB$

f. Name one set of perpendicular lines

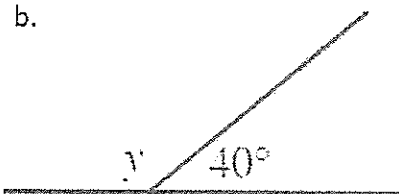
$CD$  and  $DB$   
 $CD$  and  $CA$   
 $DB$  and  $AB$   
 $CA$  and  $AB$

7. Find the value of the missing pronumerals in each of the following angles. Show your working and give reasons for all your answers.



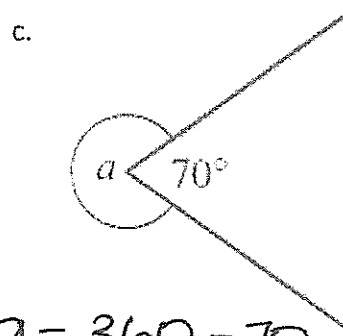
$$x = 90 - 20 \\ = 70$$

(Complementary angles add to  $90^\circ$ )  
 (Right angle)



$$y = 180 - 40 \\ y = 140$$

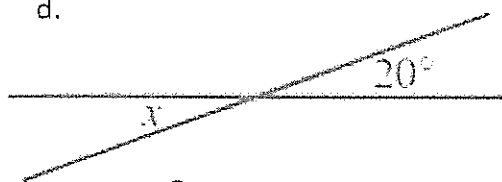
(Supplementary angles add to  $180^\circ$ )  
 (straight angle)



$$a = 360 - 70 \\ a = 290$$

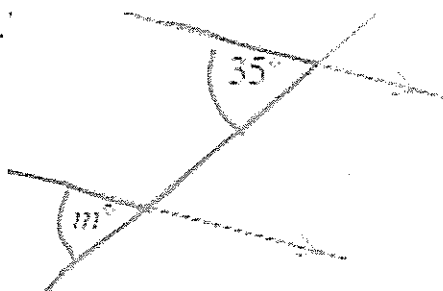
(angles at a point add to  $360^\circ$ )  
 (revolution)

d.



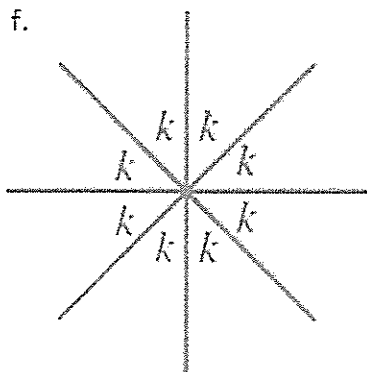
$x = 20^\circ$   
(vertically opposite angles are equal)

e.



$m = 35^\circ$   
(corresponding angles in parallel lines are equal)

\* f.

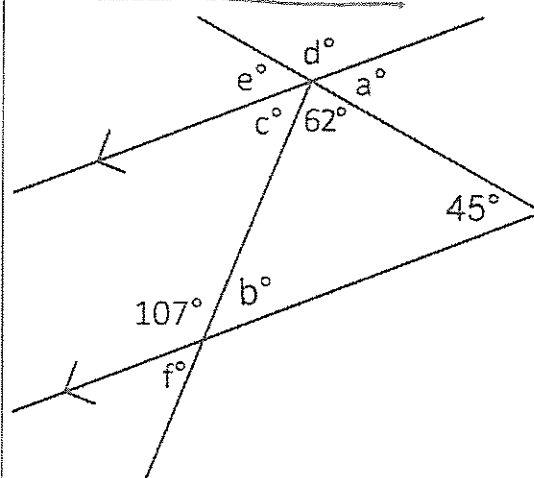


$8k = 360$   
 $k = 45^\circ$   
(angles at a point add to  $360^\circ$ )

(2)

\* g. No reasons necessary.

(6)



(2)

$$b = 180 - 107 \\ = 73^\circ \text{ (straight)}$$

$$c = 73^\circ \text{ (alternate)}$$

$$a = 180 - 73 - 62$$

$$a = 45 \text{ (straight)}$$

$$e = 45 \text{ (vertically opposite)}$$

(2)

$$d = 360 - 45 - 45 - 62 - 73$$

$$d = 135 \text{ (angles at a point)}$$

$$f = 73 \text{ (vertically opposite)}$$

- \* 8. Julia is seated in a Ferris wheel which makes one full revolution in 1 minute. Through what angle does Julia travel in 25 seconds?

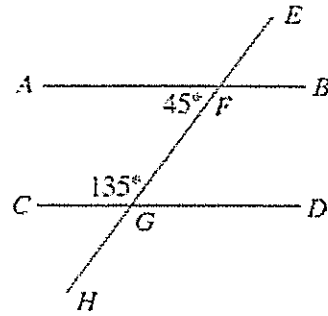
$$60 \text{ sec} = 360^\circ$$

$$1 \text{ sec} = 6^\circ$$

$$\underline{25 \text{ sec} = 150^\circ}$$

(2)

9. Is AB parallel to CD? Give a reason for your answer.



$$135 + 45 = 180$$

$\therefore AB \parallel CD$   
because the  
co-interior angles  
are equal.

(2)

END OF EXAM

