CARLINGFORD HIGH SCHOOL

DEPARTMENT OF MATHEMATICS

Year 7 Mathematics Exam

Term 1 Week 10 2019

Name : ANSWERS

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

Time allowed : ***50 Minutes***

Instructions

- No calculators allowed.
- Show all necessary working by using blue/ black pen. Pencil may be used for graphs / diagrams.
- Marks may be deducted for untidy setting out.
- Questions marked with an asterisk (*) are extension level.

Topic	Number Theory	Angles	Total
Marks	/34	/ 26	/ 60

Number Theory

1. Circle whether the following statements are true or false. **4**

a) $5 \times 3 = 3 \times 5$

True False

b) $7 + 13 = 13 + 7$

True False

c) $18 \div 6 = 6 \div 18$

True False

d) $10 - 4 = 4 - 10$

True False

2. Circle the correct answer for the following: **4**

a) Is 9372 divisible by 2?

Yes No

b) Is 238 divisible by 5?

Yes No

c) Is 72124 divisible by 4?

Yes No

d) Is 8293 divisible by 3?

Yes No

3. Write the following in index notation: **1**

$4 \times 4 \times 4 \times 4 =$ 4^4

4. Write the following in expanded form: **1**

$2^3 \times 7^2 =$

$2 \times 2 \times 2 \times 7 \times 7$

5. Evaluate the following:

a) $100 - 4^2 =$ **1**

$100 - 16$

$= 84$

b) $15 - (18 \div 6)^2 =$ **1**

$15 - 2^2$

$= 15 - 4 = 11$

c) $56 + (5 - 7)^3 =$ **2**

$56 + (-2)^3$

$= 56 - 8$

$= 48$

6. Calculate $290 \div 16$, writing the remainder as a fraction. **2**

$18\frac{1}{8}$

7. Evaluate:

a) $\sqrt{64}$ 8 **1**

b) $\sqrt{16}$ 4 **1**

c) $\sqrt[3]{8}$ 2 **1**

8. Between which two whole numbers does $\sqrt{42}$ lie? **1**

6 and 7.

9. Circle the prime numbers: **2**

1, (2), 6, 8, (11), 15, (17)

10. List all the factors of 18: **2**

1, 2, 3, 6, 9, 18

11. Explain why the number 4 is not a prime number. **1**

It has more than 2 factors.

1, 2 and 4 = 3 factors.

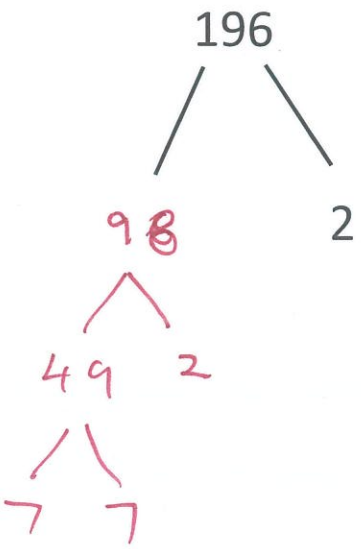
12. What is the highest common factor (HCF) of 18 and 24? **1**

6

13. What is the lowest common multiple (LCM) of 15 and 6? **1**

30

14.a) Complete the following factor tree: **2**



b) Write 196 as a product of its prime factors, in index notation. **2**

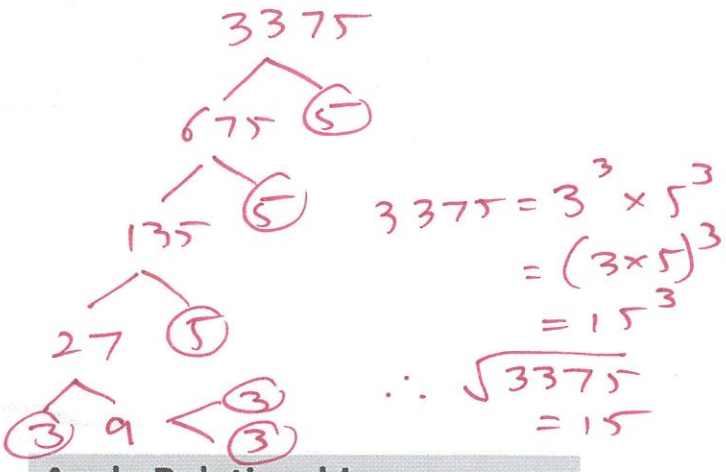
$196 = 2^2 \times 7^2$

1

c) Use your factor tree to evaluate $\sqrt{196}$

$\sqrt{196} = 14$

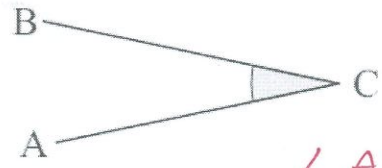
15. Using the same method as **Question 14** calculate $\sqrt[3]{3375}$ **2**



Angle Relationships

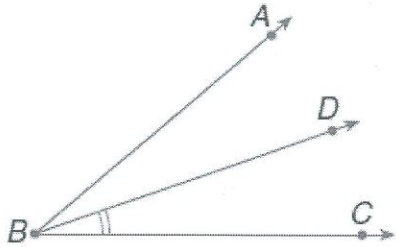
1. Name the angle shown: **1**

a)



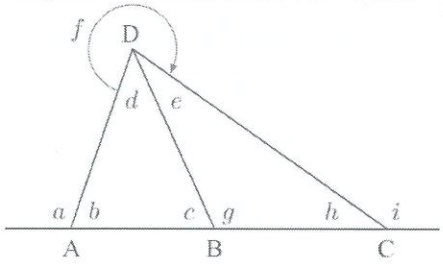
∠ACB

b) **1**



∠CBD

2. Classify all the angles shown in this diagram as acute, obtuse or reflex: **3**



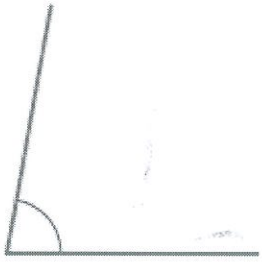
Acute: b, d, c, e, h

Obtuse: a, g, i

Reflex: f

3. Use a protractor to measure the following angles: **3**

a)

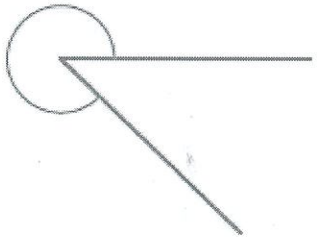


80°

b)

162°

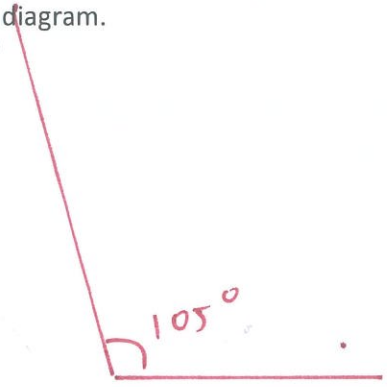
c)



316°

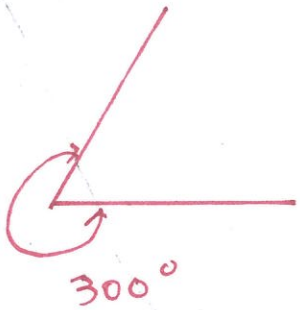
4. Use a protractor to construct the following angles. Show the angle clearly on your diagram. **2**

a) 105^0



105°

b) 300^0



300°

5. a) The complement of 65^0 is **2**

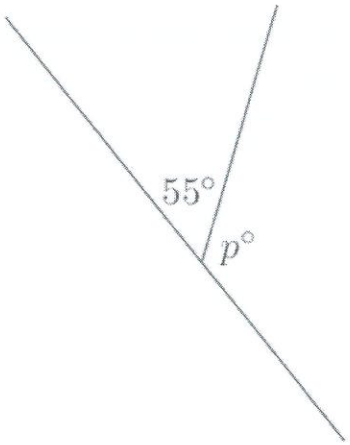
25°

b) The supplement of 15^0 is

165°

6. Find the value of the unknown angles in the following diagrams:

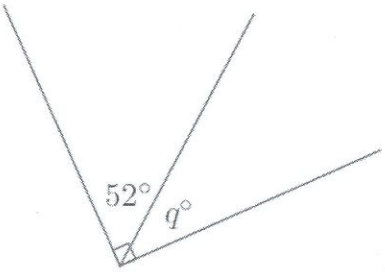
a)



1

$p = 180 - 55 = 125°$

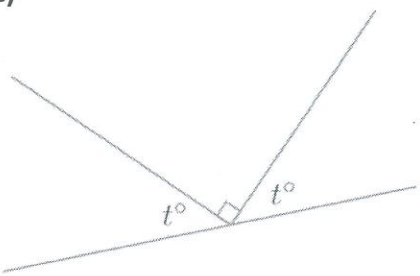
b)



1

$q = 90 - 52 = 38°$

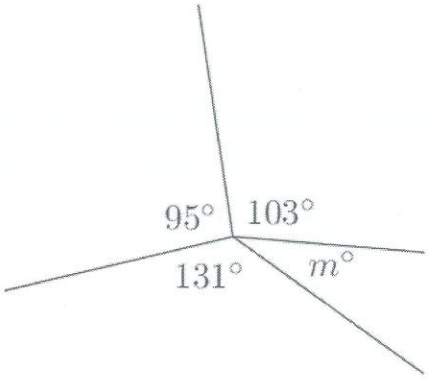
c)



1

$2 \times t = 90°$, $t = 45°$

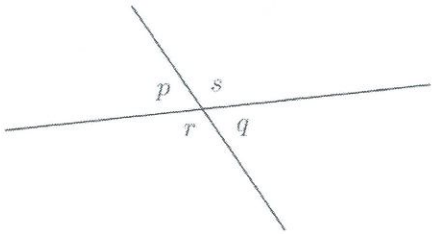
d) 1



$m = 360 - (95 + 103 + 131)$
$= 31°$

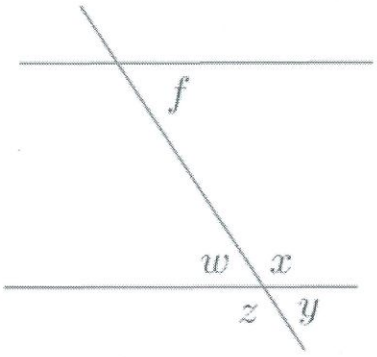
7. In this diagram, list the pairs of vertically opposite angles:

1



q, p and s, r

8. In the following diagram:



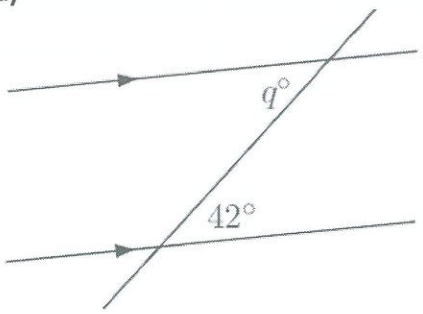
The angle alternate to f is w 1

The angle corresponding to f is y 1

The angle co-interior to f is x 1

9. Find the value of the unknown in the following diagrams and give one of the following reasons for each:
corresponding, alternate, co-interior

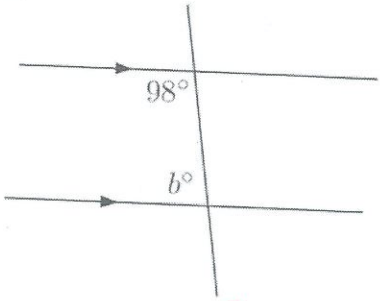
a)



$q = 42°$

Reason: alternate **1**

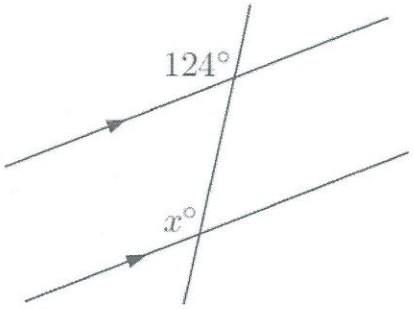
b)



$b = 82°$

Reason: co-interior **1**

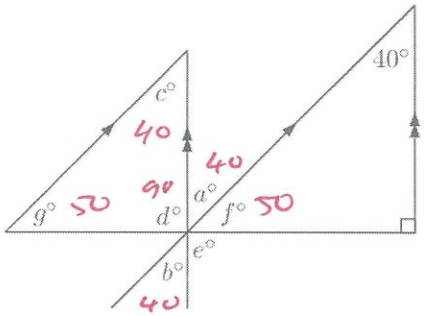
c)



$x = 124°$

Reason: Corresponding **1**

10. Find the values of the unknowns in this diagram: **3**



$a = 40°$
$b = 40°$
$c = 40°$
$f = 50°$
$d = 90°$
$g = 50°$
$d = 90°$
$e = 90°$