Carlingford High School

Mathematics

Year 7 Term 1 Task

2020

Name:Answers Class: 7__

Instructions:

- This task is to be completed independently, without consulting your notes, google or the textbook, or asking for help as you do it
- Board approved calculators may be used
- Answer each question in the space provided
- Copy and paste the following symbols if required ×, ÷
- All questions are worth one mark unless otherwise shown
- This task should take approximately 1 hour

Topic	Number Theory	Angles	Total	
Mark	/37	/33	/70	%

NUMBER THEORY (37 marks)

1. From the numbers 1 to 12, list the:

   a) Odd numbers 1, 3, 5, 7, 9, 11

   b) Composite numbers 4, 6, 8, 9, 10, 12

   c) Square numbers 1, 4, 9

2. a) Factors of 9 = 1, 3, 9

   b) Factors of 28 =1, 2, 4, 7, 14, 28

   c) What is the HCF of 8 and 28? 4

3. Given the multiples of 6 are 6,12,18, ….. write the multiples of 9 and then find the LCM of 6 and 9. [2marks]

9,18, 27

LCM of 6 and 9 is 18

4. Consider 3^4

   a) What is the power? 4

   b) What is the base? 3

   c) Write this in expanded form $3 \times 3 \times 3 \times 3$

   d) Evaluate 81

5. Evaluate

a) 7^2=49

b) 5^9=1 953 125

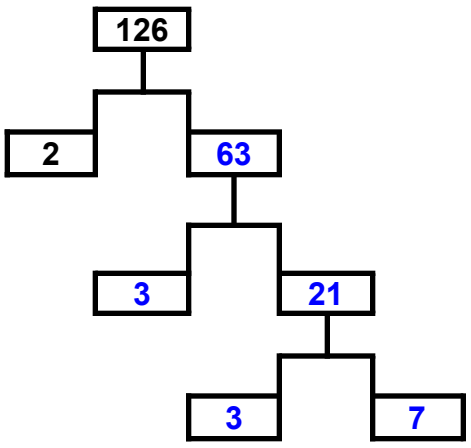
c) $\sqrt{100}$=10

d) $\sqrt[3]{512}$= 8

e) 3 cubed 27

f) The difference between 6 to the power of 4 and 12 squared 1152

6. Complete the factor tree and write 126 as a product of prime factors. [3marks]



$126 = 2 \times 3 \times 3 \times 7$ or $126 = 2 \times 3^2 \times 7$

7. Fill in the boxes to write
$9\times9\times9\times9\times9 \times 9$ in index notation.

$9^{\square}$ 6

9

8. Fill in the gaps to complete the following long division. [2marks]

$$130\frac{15}{32}$$

$$32\overline{)4175}$$

$$-\ \underline{32}$$

$$97$$

$$-\ \underline{96}$$

$$15$$

1 mark for 13 rather than 130

Note that the 97 is correct but the version the students got had 96 in its place. Allow multiple answers a remainder of 15 or 5 for 2 marks

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9. Using the distributive law complete the following. [2marks]

$7\times397 = 7\times400 - 7\times3$

$=2800-21$

$=2779$

10. Round the number 3 534 to the nearest:

a) thousand 4 000

b) ten 3 530

11. Complete

a) A number is divisible by 10 if the last digit is zero (or 0)

b) If the sum of all the digits is divisible by 9, the number is divisible by 9.

c) If the number formed by the last 3 digits is divisible by 8 the number is divisible by 8.

12. Explain in your own words how you know that 16749 is **not** divisible by 5?

It is not divisible by 5 because the last digit is not 0 or 5.

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13. Use the method of your choice to find the LCM of 32 and 60. You may use scrap paper for working and submit your final answer.

480

14. If the sum of the first three odd numbers is 1+3+5=9, the sum of the first three nonzero even numbers is 2+4+6 = 12 and the sum of the first four nonzero odd and even numbers are 1+3+5+7=16 and 2+4+6+8=20, what is

    a) The difference between the first 30 nonzero even numbers and the first 30 odd numbers? 30

    b) The sum of the first 30 even numbers? $30^2 + 30 = 930$

15. I am a composite odd number over 50. I am divisible by 3 and 7 and I am 2 less than a multiple of 5. What number am I? 63

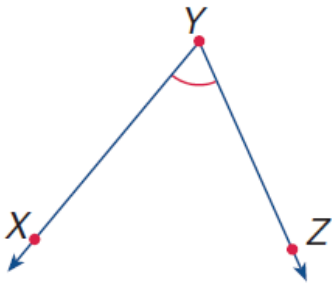
Other (larger) solutions possible- marker to check

ANGLES (33 marks)

The first five questions are multiple choice.

Choose the correct answer (A, B, C or D).

1. Name the angle shown C



A $< XZY$

B $< YXZ$

C $< XYZ$

D $< ZXY$

2. Name the vertex of the angle in Question 1. B

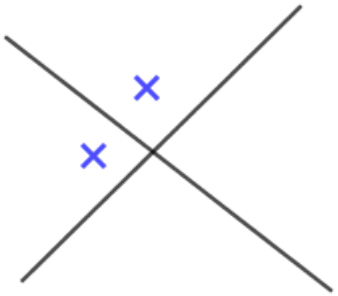
A X

B Y

C Z

D XYZ

3. What type of angles are shown D



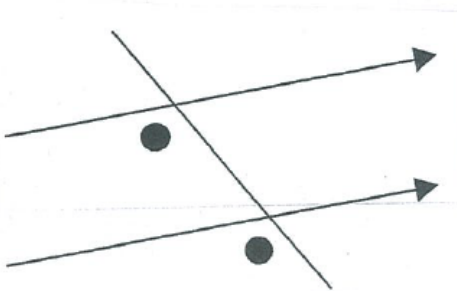
A vertically opposite

B complementary

C alternate

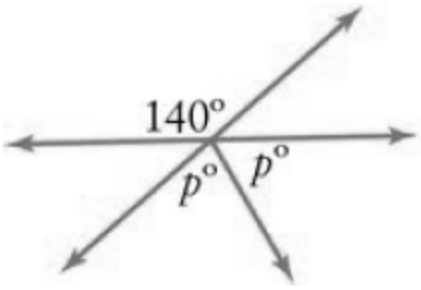
D supplementary

4. What type of angles are shown D



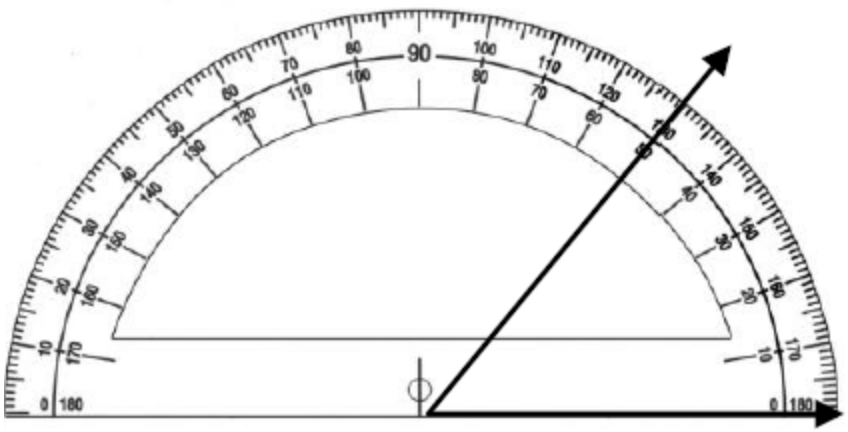
A) alternate
B) vertically opposite
C) co-interior
D) corresponding

5. Find the value of p A



A 70
B 20
C 140
D 40

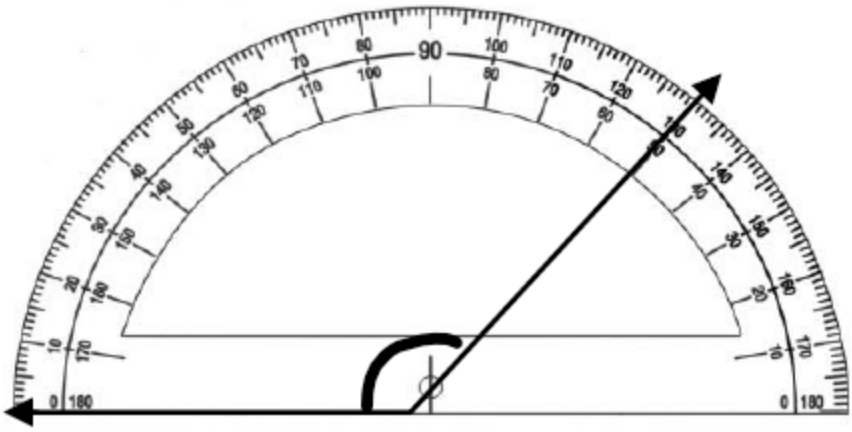
6. a) Write the size of the angle shown.50° (no marks deducted for missing °)



c) What type of angle is it? acute

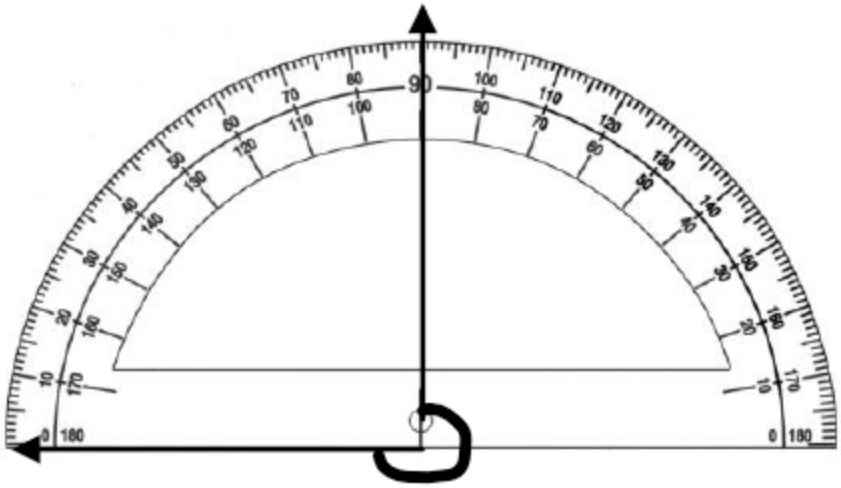
7. **Measure** the size of the marked angle and write what **type** of angle it is.

a) [2marks]



130° , obtuse angle

b) [2marks]



270°, reflex angle

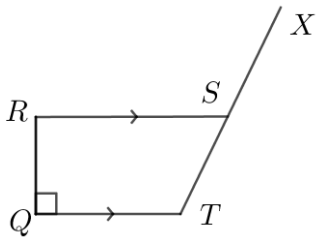
8. a) How many right angles are in one revolution? 4

b) A pizza is divided into six equal parts.

What is the centre angle of two pieces. 120°

c) What is the complement of 23° 67°

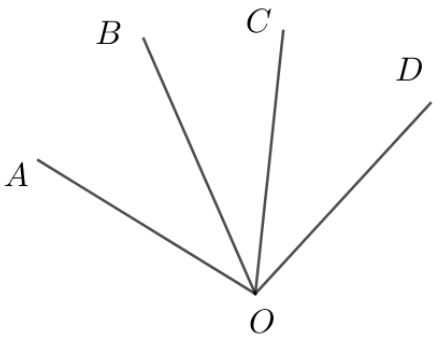
9.



a) What interval is parallel to TQ? RS or SR

b) What interval is perpendicular to RS? RQ or QR

10.



a) Name an angle adjacent to $\angle AOC$ <COD or reflex angle AOD

b) How many angles are in this diagram?
(Hint: there are more than five)

16

10. Answer TRUE or FALSE

a) An acute angle and an obtuse angle are sometimes complementary. F

b) Corresponding angles are always equal. F

c) Vertically opposite angles have a common arm. F

d) Parallel lines never meet T

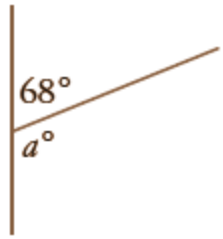
e) Co-interior angles add up to 180° if the lines are parallel. T

11. Find the unknown angle **and** write the reason for your answer from the following:

Angles on a straight line
Angles in a revolution
Vertically opposite angles
Adjacent angles

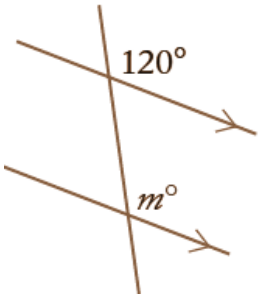
Cointerior angles on parallel lines
Corresponding angles on parallel lines
Alternate angles on parallel lines
Angles in a right angle

a) [2marks]



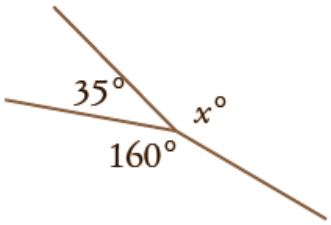
a=112 , Angles on a straight line

b) [2marks]



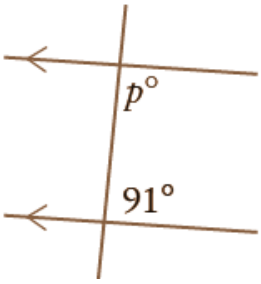
m=120, Corresponding angles on parallel lines

c) [2marks]



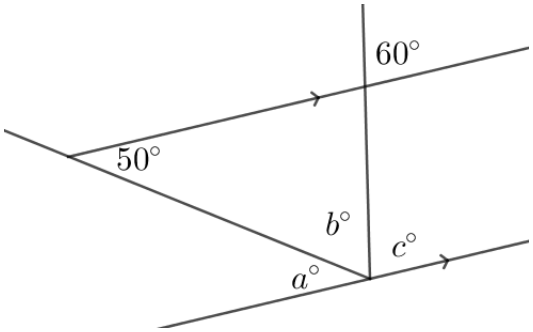
x=165, Angles in a revolution

d) [2marks]



p=89, Cointerior angles on parallel lines

13. Find the value of all the unknown angles. **(Reasons are not required)** [2marks]



a=50, b=70, c=60

END OF TASK ☺