

Question 1 Answer on template on answer book cover

Match the following columns. Fill in your answers in the table provided on the front page of your answer booklet.

/5/

1.1.	5	A	COMPOSITE NUMBER
1.2.	-4	B	PRIME NUMBER
1.3.	29	C	UNDEFINED
1.4.	15	D	INTEGER
1.5.	$\frac{x^2}{0}$	E	WHOLE NUMBER

Question 2(MULTIPLE CHOICE): Answer the following question in the table provided on the front page of your answer booklet

/5/

2.1. Which number is NOT equivalent to $4\frac{1}{3}$

A) $\frac{13}{3}$ (B) $\frac{13}{4}$ (c) $\frac{39}{9}$ (d) $\frac{117}{27}$

2.2. The simplified form of $5(x - 3) + 7$ is

A) $5x + 20$ (B) $-15x + 7$ (c) $5x - 8$ (d) $-15x + 35$

2.3. The Highest Common Factor (HCF) of 24 and 36 is

A) 2 (B) 12 (c) 72 (d) 6

2.4. The PRIME factors of 14 are

A) 1; 2; 7 and 14(B) 1 and 7 (c) 1; 2 and 7 (d) 2 and 7

2.5. The COMPLEMENT of the angle measuring 57°

A) 33° (B) 47° (c) 123° (d) 43°

Question 3

/7/

3.1. Give the set of factors of 12. (3)

3.2. Use prime factor (Ladder) division or factor tree to determine the prime factors of 252. (2)

3.3. Express 252 as the product of powers of prime factors. (1)

3.4. What is the smallest number 252 must be multiplied by to get a perfect square. (1)

Question 4**/10/**Given the expression $5 + 12a \div 4 - 2(3a^2 - 7a - 2)$ answer the following;

- 4.1. How many terms in this expression? (1)
- 4.2. What is the name of this expression based on the number of terms? (1)
- 4.3. Simplify the given expression (expand and collect like terms) (3)
- 4.4. What is the co-efficient of 'a' ? (1)
- 4.5. What is the value of the constant term? (1)
- 4.6. If $a = 6$ evaluate your simplified expression. Show all working. (3)

Question 5 Exponents**/11/**

- 5.1. $6x^2 \times 3x^3y$ (2) 5.2. $(3x^2y^3z)$ (4)
- 5.3. $\frac{5y^2}{5y^0}$ (1) 5.4. $\frac{8x^3y - 20x^2y^2 + 4xy^3}{4xy}$ (4)

Question 6**/21/**

Simplify (Expand and collect like terms where possible)

- 6.1. $-7q + 4 \times 3q$ (2) 6.2. $2x \times 7y \times 6x$ (2)
- 6.3. $a \times 2a \times 13a \times 0 \times 6a$ (1) 6.4. $a^2 \times a + a \times a + 1 \times a$ (3)
- 6.5. $3 \times a \times 5 - 7 \times 2 \times a$ (3) 6.6. $4x + 3x \times 5x + 6x$ (2)
- 6.7. $7x(8x - 9) + 9x(6x + 9)$ (4) 6.8. $\frac{3x^3 + 9x^2 - 15x}{6x^2}$ (4)

Question 7**/14/**

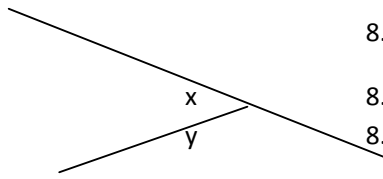
Solve the following equations (find the value of the variables for each equation that will make the equation true)

- 7.1. $3x + 7 = -11$ (2) 7.2. $3(x + 3) = 15$ (3)
- 7.3. $\frac{x}{5} - 6 = 3$ (3) 7.4. $7x + 8 = 6x + 23$ (2)
- 7.5. $8(x - 3) = 5(x + 6)$ (4)

Question 8 GEOMETRY

/13/

8.1.

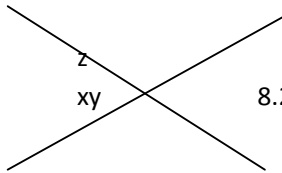


8.1.1. $x + y = \underline{\hspace{2cm}}^\circ$ (1)

8.1.2. These are a pair of _____ angles (1)

8.1.3. What is the word to describe your answer to 8.1.1. above. (1)

8.2.



8.2.1. What kind of pair of angles are x and y ? (1)

8.2.2. If $x = 47^\circ$ calculate the size of angles y and z. Give reasons for your answers. (4)

8.3.1. What is the name of an angle between $0^\circ < x < 90^\circ$? (1)

8.3.2. What is the name of an angle between $90^\circ < x < 180^\circ$? (1)

8.3.3. Give the range in angles for any Reflex angle. (2)

8.4. What is the name of the instrument used to measure an angle? (1)

Question 9

/6/

The attached diagram on the back of the cover sheet of your answer booklet, which you are familiar with, shows an image of an island and a Cartesian Plane overlay below.

9.1. The Log Cabin is given by the co-ordinates (8;7). Plot this point on the Cartesian Plane provided. Label this point "Log Cabin". (1)

9.2. Give the co-ordinates of the boats at points A and C (2)

9.3. Bruce and his family decide to go for a boat ride to have a picnic on the south bank (point P), where the Cub Creek River enters Little Bear Lake. If each unit on the horizontal axis represents 2,5km, calculate the distance from the cabin to the picnic site. Show all working. (3)

Question 10**/13/**

Medium term parking at the airport has a standard charge of R15 plus a charge of R3 per hour parked.

Hours parked	1 hour	3 hour	5 hour	7 hour
Total Cost	R18	R24	R30	R36

- 10.1. Construct a flow diagram to show how you calculate the cost of parking in this area. (2)
- 10.2. Use your flow diagram to calculate the cost of parking for 6 hours. (2)
- 10.3. Convert your flow diagram into an equation. Let the input value be represented by 'x' and the output value be represented by the letter 'y' (1)
- 10.4. If a recent stay cost a driver R102, calculate the length of the stay in hours. (3)
- 10.5. Use the table above to draw a graph of the relationship between the duration of stay and the total cost of parking on the Cartesian Plane provided on the front cover of your answer booklet. (4)
- 10.6. Show on your graph how you can read off the duration of a stay that cost a driver R39. (1)

Question 11**Word Problems****/8/**

- 11.1. When the sum of a certain number and 7 is doubled the output value is 22.
 - 11.1.1. Write an equation to show this function. (1)
 - 11.1.2. Use your equation from 11.1.1. to calculate the number. (2)
- 11.2. Julia is twice as old as her sister Ruth while Ruth is 4 years younger than her brother Ben. How old is Ben if the sum of their ages is 32 years. (5)

Question 12**Number Patterns****/7/**

Given the sequence of numbers -5; 1; 7; 13;

- 12.1. give the next two terms in the sequence. (2)
- 12.2. give the general form of the equation to calculate the 'nth.' Term in the sequence. (2)
- 12.3. what is the value of the 16th. Term in this sequence. (3)

TOTAL 120