



Name: _____
Grade 8 Mathematics Examination
Time: 2 hour
Examiner: Ms B. Friend

Class: _____
Date: 7 November 2016
Marks: 100

Instructions:

1. Do all questions, showing all working out.
 2. Work neatly, and leave a line open between each question.
 3. Calculators may be used.
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Question 1:

Choose the correct answer from the choices below. Write down only the letter of the correct answer in the table on the Answer sheet.

1.1. The value of $(-2) + (-4)(2)$ is:

- A. -6 B. 6 C. -10 D. 10

1.2. The simplified equation $3x^2 - 5x + 3 - 4 + 2x^2 - 6x$ is:

- A. $5x^2 + 11x + 7$ B. $5x^2 - 11x + 1$ C. $5x^2 + 11x - 1$ D. $5x^2 - 11x - 1$

1.3. The expression $(2p^2)^3(3q)^2$ is simplified to:

- A. $72p^6q^2$ B. $36p^5q^3$ C. $54p^6q^2$ D. $72p^5q^3$

1.4. If $a = -2$ and $b = 3$ then $a^2 - b^3$ is equal to:

- A. -31 B. -13 C. -23 D. -5

1.5. If A $(-2; 3)$ and we translate the point 3 units left and 2 units up, the new point is:

- A. $(-5; 5)$ B. $(1; 5)$ C. $(-5; 1)$ D. $(1; 1)$

1.6. If we reflect the point $(x; y)$ in the x axis, the point becomes:

- A. $(-x; y)$ B. $(-x; -y)$ C. $(x; -y)$ D. $(y; x)$

1.7. $3, 4, 5, 5, 5, 7, 8, 8$ is a set of data. 5 is the:

- A. Mode B. Median C. Range D. All three

1.8. The mean of these numbers $12, 14, 26, 23, 15, 27, 13$ correct to whole number is:

- A. 18 B. 23 C. 19 D. 130

1.9. The probability of throwing an even number on a dice is:

- A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{1}{6}$ D. $\frac{2}{3}$

1.10. The probability of drawing a red card from a full deck of playing cards is:

- A. $\frac{1}{6}$ B. $\frac{1}{3}$ C. $\frac{1}{2}$ D. $\frac{2}{3}$

Question 2:

Match the definition in column A with the terms in column B. Write down the LETTER of the correct term in the table on the Answer sheet.

	COLUMN A	COLUMN B
2.1	Numbers that divide evenly into another number	A. Reflex angle
2.2	The quotient of a number and 0	B. Non-real number
2.3	An angle greater than 90 and less than 180	C. Triangular prism
2.4	A solid with triangle base and rectangular sides	D. Supplementary angles
2.5	The square root of a negative number	E. Factors
2.6	Co-interior angles between parallel lines	F. Tetrahedron
2.7	The angle greater than 180	G. Equal angles
2.8	A platonic solid with four triangular faces	H. Undefined
2.9	Alternate angles between parallel lines	I. Complementary angles
2.10	Two angles that up to 90	J. Obtuse angle

(10)

Question 3:

Simplify fully:

3.1. $2a^2(4a + 2)$ (2)

3.2. $-3x^3y(2xy - xy^2)$ (2)

3.3. $\frac{4x^4 - 8x^2}{2x^2}$ (2)

3.4. $5xy + (-3xy) + x - (-2x)$ (2)

3.5. $\sqrt{25x^2 - 9x^2}$ (2)

Question 4:

Simplify and leave all exponents positive:

4.1. $(2x^5)(-3x^3)$ (2)

4.2. $(2a^3b^3)(a^2b^3)^2$ (3)

4.3. $\frac{9p^2}{3p^4}$ (2)

4.4. $\frac{(2x^3)(2x)^3}{4x^58x^4}$ (4)

Question 5:

- 5.1. Determine 15% of R23 450 (2)
- 5.2. Divide 34500 in a ratio of 2: 3 : 5 (5)
- 5.3. Determine the amount of money I will receive if I deposit R2 500 for 3 years at 12,5% simple interest per annum. (3)

Question 6:

Solve for x:

- 6.1. $2x - 4 = 16$ (2)
- 6.2. $3(x + 2) - 4(3 - x) = 21$ (4)
- 6.3. $\frac{3x}{4} = \frac{(x-1)}{2}$ (3)
- 6.4. $3^x = 27$ (1)

Question 7:

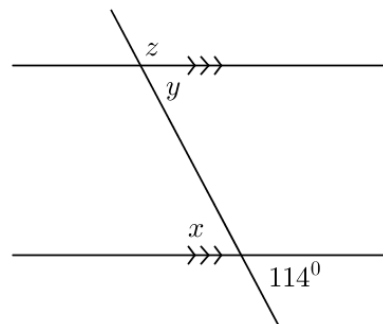
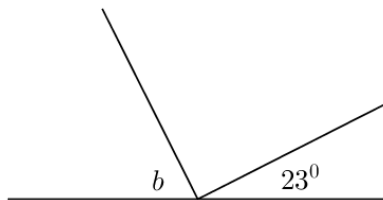
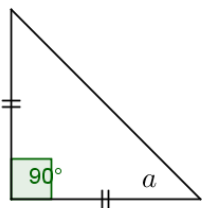
Consider the table below and then answer the questions that follow:

x	1	2	3	4	5
y	2	5	8	11	14

- 7.1. Give the equation for the pattern found in the y values of the table (2)
- 7.2. What is the value of the 6th term? (1)
- 7.3. On the system of axes on the answer sheet, plot the points from the table. (5)

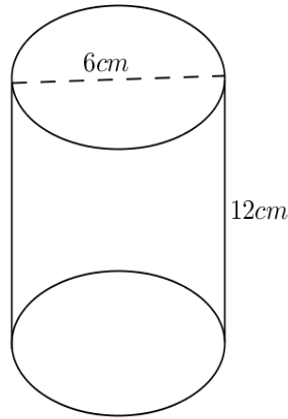
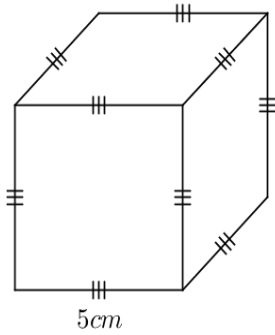
Question 8:

Write down the value of the unknown angles in the diagrams below. You must give a reason for your answers.



(10)

Question 9:



Alongside are a cube with sides equal to 5cm and a cylinder with diameter of 6cm and a height of 12cm.

Calculate the

9.1. surface area of the cube (3)

9.2. volume of the cylinder (4)

Question 10:

Below are the test results (out of 50) for 20 grade 8 learners:

12 14 14 18 21 23 25 25 25 28
30 34 36 39 41 44 46 46 48 49

10.1. Draw a stem leaf diagram on the answer-sheet provided (4)

Determine the: 10.2. mode of the data (1)

10.3. median of the data (1)

10.4. mean of the data (2)

10.5. range of the data (2)

Question 11:

I have a bag with 5 blue marbles, 3 green marbles and 4 red marbles. If I take out one marble what is the probability that:

11.1. I will take out a blue marble? (1)

11.2. I will take out a green marble? (1)

11.3. I will take out a yellow marble? (1)

11.4. I will not take out a red marble? (1)