Name: _____ Class: _____.

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

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.

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. ½ B. ⅓ C. ⅙ D. ⅔

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

A. ⅙ B. ⅓ C. ½ D. ⅔

(10)

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. $\frac{(2x^3)(2x)^3}{4x^5 8x^4}$ (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

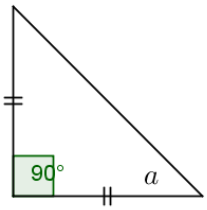
7.1. Give the equation for the pattern found in the y values of the table (2)

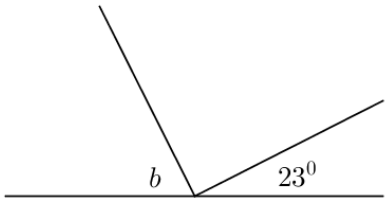
7.2. What is the value of the 6th term? (1)

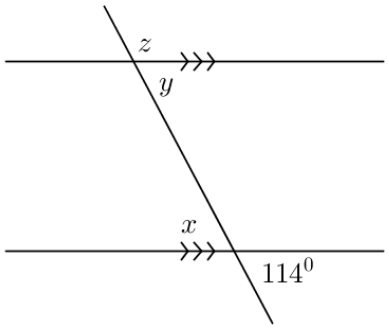
7.3. On the system of axes on the answer sheet, plot the points from the table. (5)

Question 8:

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

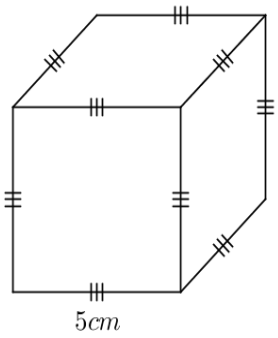


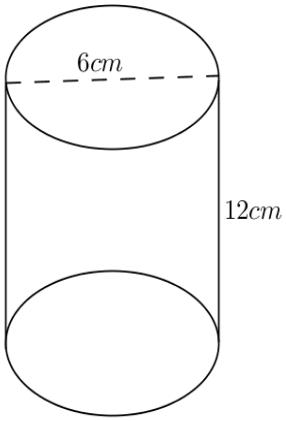




(10)

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)