



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

UMLAZI DISTRICT

**MATHEMATICS TEST
GRADE 8
JUNE 2018**

TIME: 2 Hours

TOTAL: 100 MARKS

This question paper consists of 6 pages.

INSTRUCTIONS AND INFORMATION TO THE LEARNER

Read the following instructions carefully before answering the questions:

1. Read the questions carefully.
2. Answer **ALL** the questions.
3. Write neatly and legibly.
4. Number your answers exactly as the questions are numbered.
5. Clearly show **ALL** the calculations, diagrams, graphs, etc. you have used in determining the answers.
6. You may use an approved scientific calculator (non-programmable and non-graphical)
7. This question paper consists of **10** questions.
8. Diagrams are **NOT** drawn to scale.

QUESTION 1

- 1.1 State whether the following statements are TRUE or FALSE:
- 1.1.1 $\frac{3}{0} = 0$ (1)
- 1.1.2 1 is a prime number. (1)
- 1.1.3 $2a + 8 = 2(a + 4)$ (1)
- 1.2 Determine the prime factors of 420. Show all working. (3)
- 1.3 Mr Zuke has 3 children. Their ages are 2, 3 and 5 years old. He wins some money in the lottery and decides to share R15 000 between them in the ratio 2:3:5. Determine the amount of money the oldest child gets. (3)
- 1.4 The perimeter of a rectangle is equal to 720 cm. The ratio of its length to its breadth is 3:5. Calculate the area of the rectangle. (5)
- [14]

QUESTION 2

- 2.1 Complete the following statements by choosing $>$; $<$ or $=$
Write only the question number and your answer.
- 2.1.1 $-3 + 2$ _____ $9 - 10$ (1)
- 2.1.2 $2(-5)$ _____ $-2(-5)$ (1)
- 2.2 Simplify the following, without the use of a calculator:
- 2.2.1 $(-36) + 5 - (-10)$ (2)
- 2.2.2 $\sqrt[3]{2^4 + 11}$ (2)
- 2.2.3 $1\frac{3}{5} \times \frac{3}{4}$ (2)
- 2.2.4 $\sqrt{0,0081} + \frac{91}{100}$ (2)
- 2.2.5 $\sqrt{1\frac{7}{9}}$ (3)
- 2.3 A company employs 34 men and 8 women.
- 2.3.1 Determine what fraction of the staff is men. Simplify your answer. (2)
- 2.3.2 Determine what percentage of the staff is women. (2)
- [17]

QUESTION 3

3.1 Write 2 870 000 in scientific notation. (1)

3.2 Write $3,075 \times 10^5$ in normal notation. (1)

3.3 Simplify the following:

3.3.1 $x^3 \times x^2$ (1)

3.3.2 $\frac{36g^4h^3}{6gh}$ (2)

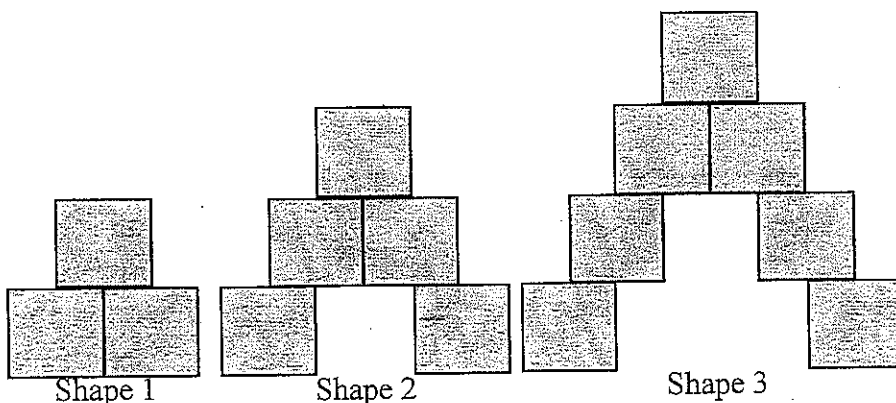
3.3.3 $2(-2b^3)^2$ (3)

3.3.4 $(2a)^0 + 2a^0$ (3)

[11]

QUESTION 4

Study the pattern below and answer the questions that follow.



4.1 Write down the number of squares that will be in the 4th, 5th and 6th shape. (3)

4.2 Determine an algebraic expression (the general rule) to describe this pattern. (2)

[5]

QUESTION 5

Given: $y = -2x + 3$, determine the missing values (a and b) in the table below:

x	-2	-1	0	1	2
y	a	5	3	b	-1

[2]

QUESTION 66.1 Given: $x^2 + 3x - 5y + 6$.

6.1.1 Write down the number of terms in this expression. (1)

6.1.2 Write down the constant term of this expression. (1)

6.1.3 Write down the co-efficient of y in this expression. (1)

6.2 Simplify the following:

6.2.1 $5a + 3 - 2a$ (2)6.2.2 $3(x + y) - 4y$ (2)6.2.3
$$\frac{12x^3y - 18x^2y^2 + 24xy}{6xy}$$
 (4)6.3 If $k = -1$ and $g = 3$, determine the value of the following expression:

$$2k^2g + 4g^2$$
 (3)

6.4 Subtract $2y^2 + 3y - 7$ from $8y + 3y^2 + 9$. (3)**[17]****QUESTION 7**7.1 Solve for x :

7.1.1 $x + 5 = 12$ (1)

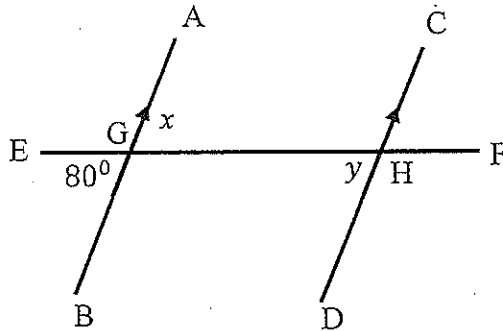
7.1.2 $4(x - 3) = 3(2x - 1) - 2$ (4)

7.2 The length of a rectangle is 3 meters more than twice the width of the rectangle. Let the width be x meters.7.2.1 Write down the length of the rectangle in terms of x . (2)7.2.2 If $x = 7$ m determine the perimeter of the rectangle. (3)**[10]**

QUESTION 8

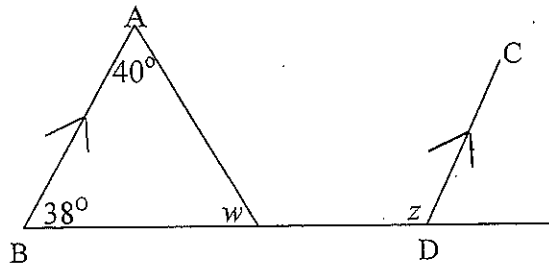
8.1 Construct a 90° angle, **without the use of a protractor**. (3)

8.2 Determine the values of x and y in the diagram below. Give reasons for your answers.



(4)

8.3 Determine, with reasons, the sizes of w and z in the diagram below. Use only the labelled angles.

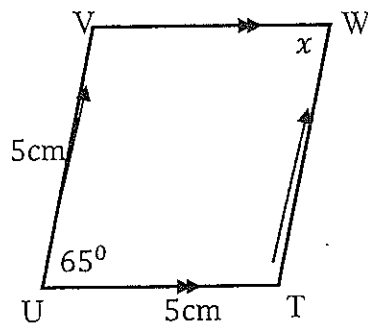


(4)

[11]

QUESTION 9

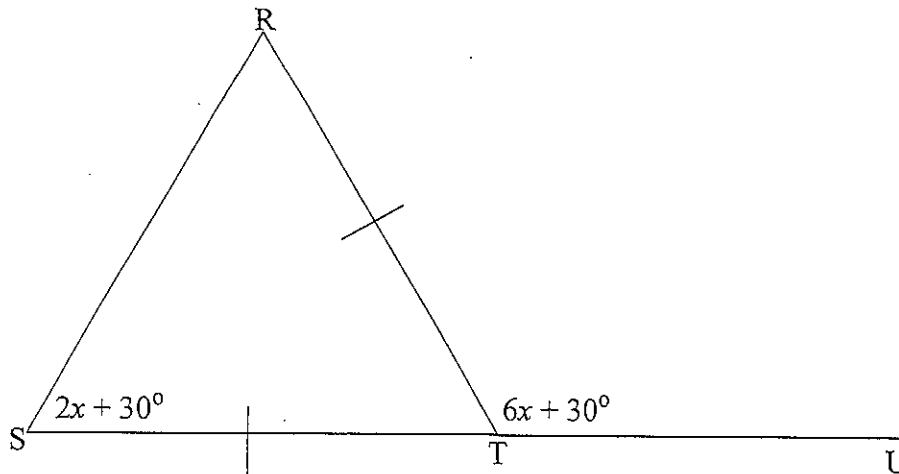
9.1 VUTW is a quadrilateral with $VU = UT = 5$ cm. $VU \parallel WT$ and $VW \parallel UT$.



9.1.1 Determine what type of quadrilateral VUTW is. Justify your answer. (2)

9.1.2 Hence, determine the value of x , giving a reason. (2)

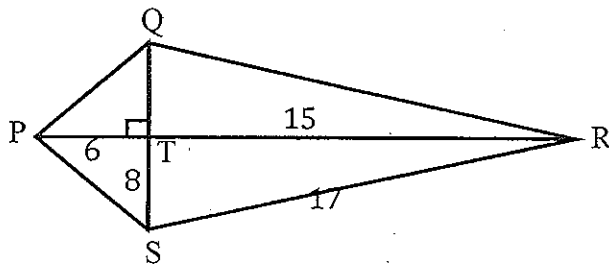
9.2 In $\triangle RST$ it is given that $RT = ST$.



9.2.1 Determine \widehat{R} in terms of x . (2)

9.2.2 Determine the value of x . Show all working and give reasons. (4)

9.3 Given $PQRS$ is a kite, with $QS \perp PR$. $TS = 8$ cm, $PT = 6$ cm, $SR = 17$ cm and $TR = 15$ cm. Determine the length of QT and QR , giving reasons for your answers. (3)



[13]

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