



**Wes-Kaapse
Regering**

Onderwys

Overberg Education District

GRADE 8

JUNE EXAM

MATHEMATICS

June 2014

MARKS: 100
TIME: 2 HOURS

INSTRUCTIONS AND INFORMATION

1. Answer all the questions on folio paper and number your answers according to the numbering system in the question paper.
2. You may use a calculator unless stated differently.
3. Show ALL calculations clearly.
4. Round off ALL answer to TWO decimal places unless stated differently.
5. Show all units where applicable.
6. Write neatly and legibly.
7. Leave a line open between each sum.

QUESTION 1

1.1 Write down

1.1.1 the multiples of 5 between 15 and 45

1.1.2 the prime factors of 20

1.1.3 the composite numbers smaller than 9

(3)

1.2 Arrange the four numbers in ascending order

30 933 -30 399 -30 933 30 399 (2)

1.3 Write in scientific notation

30 478 (2)

1.4 Determine the value of the following without the use of a calculator. Show all steps.

$$-8 + 7 - \frac{15}{3} + 2 \text{ of } -8 \quad (3)$$

1.5 1.5.1 Write the following number as a product of its prime factors. (Hint: use the ladder method or factor tree)

1 296 (2)

1.5.2 Now find without a calculator

$$\sqrt{1\,296} \quad (2)$$

1.6 1.6.1 Jake and Brad divide R 450 in the ratio 3:2 between them. How much money does each receive ? (3)

1.6.2 Tebogo works on Saturdays at a carwash. He gets paid R 600 per month. His salary increases by 15%. What is his new salary now per month? (3)

[20]

QUESTION 2

2.1 Study the following expression and answer the questions that follow:

$$-2x - x^3 + 9x^2 + 1$$

2.1.1 How many terms does the expression consist of ? (1)

2.1.2 What is the coefficient of x ? (1)

2.1.3 What is the constant term? (1)

2.1.4 Determine the value of the expression if $x = -2$ (2)

2.2 Simplify:

2.2.1 $-8 - 9h + 2h + 13$ (2)

2.2.2 $3ab + 2a + b + a - 3b^2 - 3a - 4ba + 5b^2 - b$ (3)

2.3 Simplify:

2.3.1 $x^0 \cdot x^3$ (2)

2.3.2 $\frac{n^6 \cdot m^4 \cdot n^4 \cdot m^2}{n^2 \cdot m^6 \cdot n^4 \cdot m^0}$ (4)

2.3.3 $(-5x^3y^2)(3x^2y^4)(-2x)$ (3)

2.4 Simplify:

2.4.1 $5x(2x + 4y)$ (2)

2.4.2 $-4(3x^2 + 6x - 20) + 12x^2 + 3x$ (4)

2.4.3 $\frac{4xy - 32x^2y^3}{4xy}$ (4)

2.5 Solve the following equations:

2.5.1 $4x = 3x + 5$ (2)

2.5.2 $x + 5 = -10$ (2)

2.5.3 $-3(p + 1) = p - (2p - 1)$ (5)

2.6 2.6.1 Write an algebraic equation for the following:

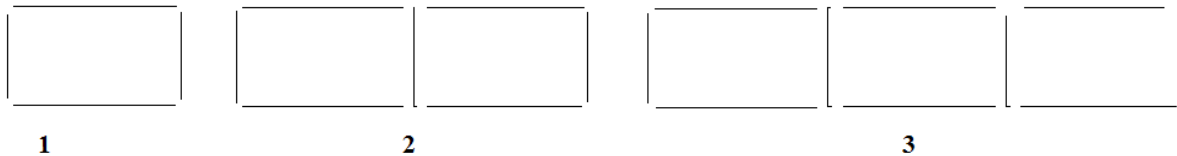
A certain number decreased by 6 is 9 less than 20. Let the number be x . (2)

2.6.2 Now find the value of the number. (2)

[42]

QUESTION 3

3.1 The following pattern is obtained by placing match sticks as shown in the diagramme.



3.1.1 Draw pattern 6. (2)

3.1.2 Determine the values of a and b in the table : (3)

Pattern	1	2	3	4	10
Number of match sticks	4	7	10	a	b

3.1.3 Use the table and write a general rule in terms of K and p in the form $K = \dots$, where K is the number of match sticks, and p is the number of patterns. (2)

3.1.4 How many match sticks are there in pattern 58? (2)

3.1.5 How many patterns can be built with 148 match sticks? (2)

[11]

QUESTION 4

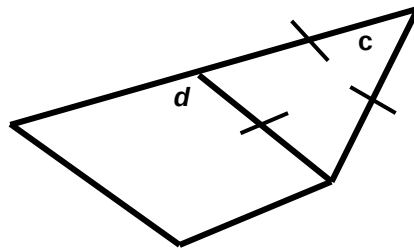
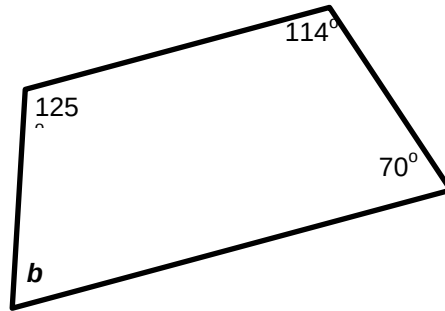
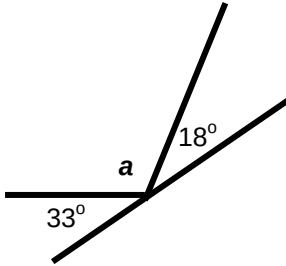
4.1 Match the statement in the right hand column with the shape in the left hand column:

Shape	Statement
1) Isosceles triangle	a) All sides are equal
2) Rhombus	b) All the angles are right angles
3) Rectangle	c) 2 sides and 2 angles are equal
4) Right-angled triangle	d) Only one pair of opposite sides are parallel
5) Trapezium	e) One angle is a right angle

Write only the number 1 to 5 down with the correct letter next to it, e.g. 1a (5)

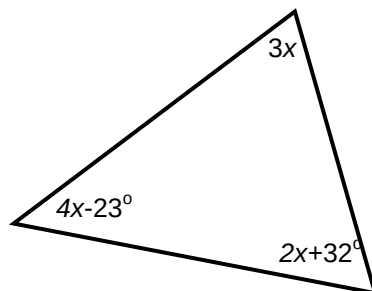
4.2 Is a square a rectangle? Give reasons for your answer. (2)

- 4.3 In the diagrams below determine the sizes of the unknown angles a , b , c and d . Show all your calculations and give reasons for your answers. (10)



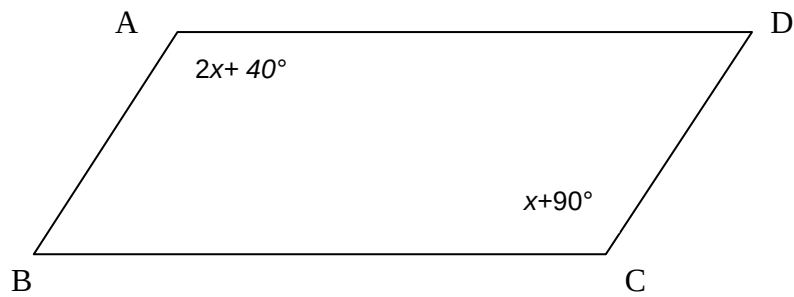
4.4

- 4.4.1 Find the value of x in the sketch below. Give reasons for your statements and show ALL your calculations.



(5)

4.4.2 In the diagramme below ABCD is a parallelogram. Find the value of x and then the size of $\angle A$.



(5)

[27]

TOTAL: 100