



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



ANNUAL NATIONAL ASSESSMENT 2015 GRADE 7 MATHEMATICS TEST

MARKS: 100

MARKS

TIME: 2 hours

PROVINCE _____

DISTRICT _____

CIRCUIT _____

SCHOOL _____

EMIS NUMBER (9 digits)

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CLASS (e.g. 7A) _____

SURNAME _____

NAME _____

GENDER (✓)

BOY	
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GIRL	
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DATE OF BIRTH

C	C	Y	Y	M	M	D	D
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This test consists of 14 pages, excluding the cover page.

Instructions to the learner

1. Read all the instructions carefully.
2. Question 1 consists of 10 multiple-choice questions. You must circle the letter of the correct answer.
3. Answer questions 2 to 8 in the spaces provided.
4. All working must be shown.
5. The diagrams are not drawn to scale.
6. The test is out of 100 marks.
7. The test duration is 2 hours.
8. The teacher will lead you through the practice question before you start the test.
9. You may use a calculator unless otherwise stated.

Practice question.

Circle the letter of the correct answer.

1. The next number in the number sequence 1 ; 3 ; 5 ; 7 ; ... is ...
A 8
B 12
C 16
D 9

Your answer is correct if you circled D.

The test starts on the next page.

QUESTION 1

1.1 The lowest common multiple of 5 and 7, is ...

A 5

B 35

C 12

D 7

(1)

1.2 In $6x + 2$, the variable is ...

A $6x$

B $6x + 2$

C x

D 6

(1)

1.3 32 written as a product of its prime factors is ...

A 1×32

B 2×16

C $2 \times 2 \times 2 \times 2 \times 2$

D $2 \times 4 \times 4$

(1)

1.4 What percentage is 1 200 of 5 000?

A 24%

B 50%

C 38%

D 12%

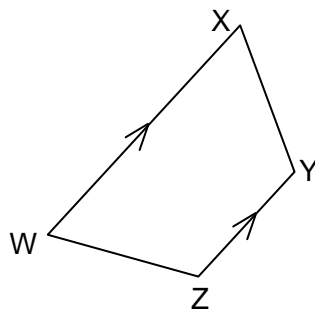
(1)

- 1.5 What is the value of $3 - \frac{k}{2}$ if $k = 4$?
- A 4
 - B 1
 - C 2
 - D -2
- (1)

- 1.6 A quadrilateral in which all 4 sides are equal, is called a ...
- A rectangle.
 - B parallelogram.
 - C rhombus.
 - D kite.
- (1)

- 1.7 A set of points with a definite starting-point and no definite end-point is called a ...
- A line segment.
 - B ray.
 - C straight line.
 - D perpendicular line.
- (1)

1.8



In the above figure, WX and ZY are...

- A perpendicular line segments.
 - B parallel line segments.
 - C intersecting line segments.
 - D vertical line segments.
- (1)

- 1.9 The perimeter of a regular pentagon with one side equal to 5 cm is ...
- A 25 cm
 - B 5 cm
 - C 35 cm
 - D 30 cm
- (1)

1.10

x	1	2	3	4
y	4	5	6	7

The relationship between x and y is ...

- A $y = 5 \times x$
 - B $y = 3 \times x$
 - C $y = x + 4$
 - D $y = x + 3$
- (1)

[10]

QUESTION 2

- 2.1 Calculate without using a calculator. Show the calculation steps where needed.

2.1.1 $1\ 643\ 884 + 262\ 206$

(2)

2.1.2 $6\,517 \div 31$

(4)

2.1.3 315×236

(4)

2.1.4 $2^3 \times 1^4$

(3)

2.1.5 $\sqrt{144} + 6^2$

(3)

2.1.6 $\frac{3}{5} \times \frac{7}{6}$

(3)

2.1.7 $0,012 \div 4$

(1)

2.1.8 $100 - 12 \div (8 + 4)$

(3)

2.2 Write 1,6 as an improper fraction in the simplest form.

(2)

2.3 A group of 25 Grade 7 learners watched a soccer match. The ratio of the number of boys to the number of girls was 2 : 3. How many boys were there?

(3)

2.4 Calculate 10% of R15,00.

(3)

2.5 John travelled by car at an average speed of 80 kilometres per hour for $4\frac{1}{2}$ hours. Calculate how far he travelled.

(3)

[34]

QUESTION 3

3.1 3.1.1 Fill in the missing numbers in the following number sequence:

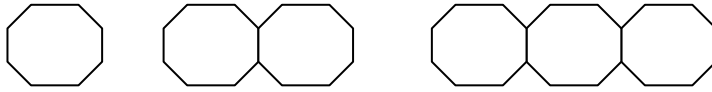
1 ; 4 ; 9 ; _____ ; 25 ; _____.

(2)

3.1.2 Are the numbers in the above number sequence prime numbers, square numbers or cubic numbers?

(1)

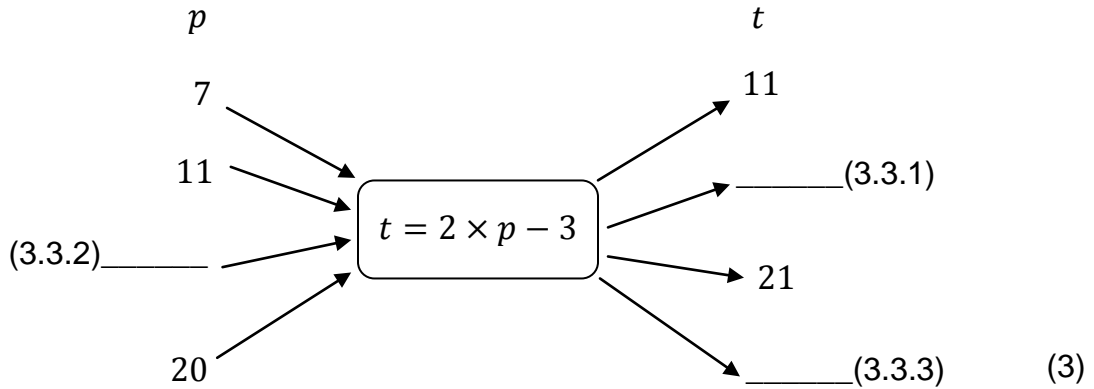
3.2 Study the following diagram pattern of regular octagons and then complete the table.



Number of polygons	1	2	3	4	n
Number of sides	8	15	22		

(3)

3.3 Use the given rule to fill in the missing values in the flow diagram below.



(3)

3.4 Calculate the value of $c^3 + 12$ if $c = 3$.

(3)

3.5 Solve the following equations by inspection:

3.5.1 $\frac{k}{3} = 9$

(1)

3.5.2 $y - 17 = 13$

(1)

3.6 3.6.1 Write an algebraic expression for the following:

x increased by five

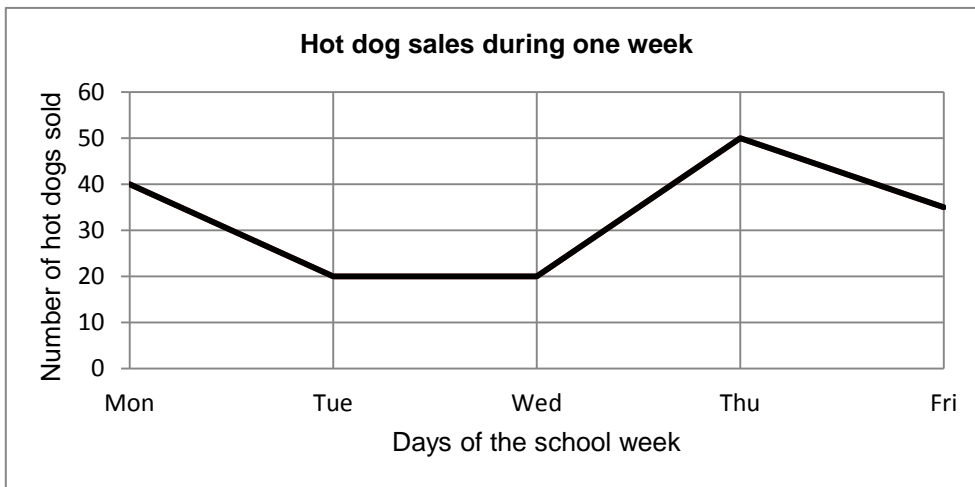
(1)

3.6.2 Write a number sentence for the following:

Two times a certain number p decreased by eight is equal to twelve.

(3)

3.7 The given graph illustrates the number of hot dogs sold on different school days during one week.



3.7.1 How many hot dogs were sold on Thursday?

(1)

3.7.2 On which days did the sales remain constant?

(1)

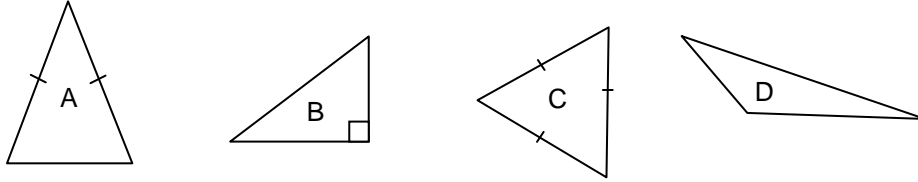
3.7.3 Calculate the difference between the number of hot dogs sold on Monday and on Thursday.

(2)

[22]

QUESTION 4

4.1 Study the triangles marked A, B, C and D.

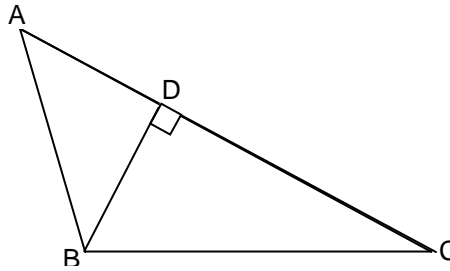


Complete the table below by filling in A, B, C or D.

Equilateral triangle	Right-angled triangle	Obtuse-angled triangle

(3)

4.2 Study the diagram below and answer the questions that follow.



4.2.1 What kind of angle is \hat{C} ?

_____ (1)

4.2.2 What kind of angle is $\hat{A}BC$?

_____ (1)

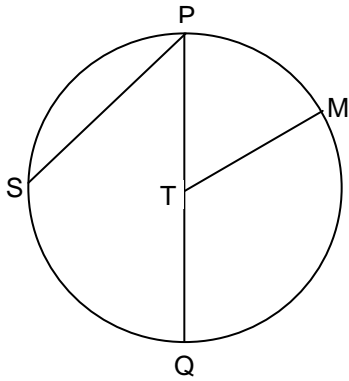
4.2.3 What kind of angle is $\hat{B}DC$?

_____ (1)

4.2.4 Name a pair of perpendicular line segments.

_____ (1)

4.3 T is the centre of the circle. Name the parts of the circle that are listed.



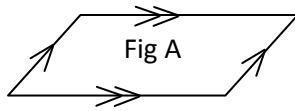
4.3.1 PQ is called _____.

4.3.2 TM is called _____.

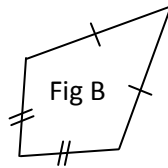
4.3.3 PS is called _____.

(3)

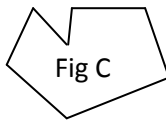
4.4 . Identify each of the figures below:



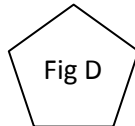
4.4.1 Figure A is a _____



4.4.2 Figure B is a _____



4.4.3 Figure C is a _____



4.4.4 Figure D is a _____

(4)

[14]

QUESTION 5

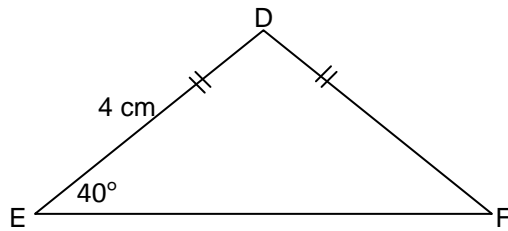
5.1 In an equilateral triangle PQR, $PQ = 23 \text{ mm}$

Complete:

5.1.1 $QR = PR = \underline{\hspace{2cm}} \text{ mm}$ (1)

5.1.2 $\hat{P} = \hat{Q} = \hat{R} = \underline{\hspace{2cm}}^\circ$ (1)

5.2 Study the diagram below and then, answer the questions that follow.



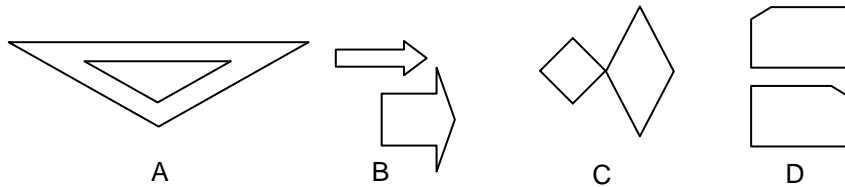
5.2.1 What is the length of DF?
 _____ (1)

5.2.2 If $\hat{E} = 40^\circ$, what is the size of \hat{F} ?
 _____ (1)

[4]

QUESTION 6

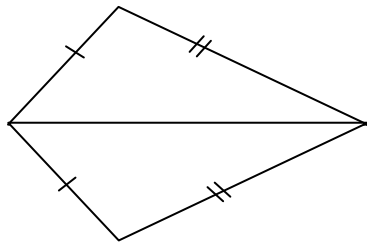
6.1 Study the pairs of diagrams below and complete the statements by filling in A or B or C or D in the spaces provided.



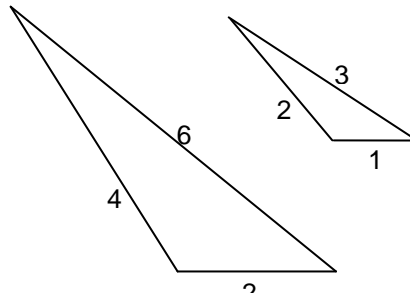
6.1.1 The 2 shapes in _____ are congruent. (1)

6.1.2 The 2 shapes in _____ are similar. (1)

6.2 Write down whether each pair of triangles given below is congruent, similar or neither.



Pair 1



Pair 2

6.2.1 Triangles in pair 1 are _____ . (1)

6.2.2 Triangles in pair 2 are _____ . (1)

[4]

QUESTION 7

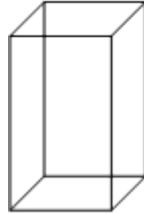
7.1 Calculate the perimeter of the rectangle if the length is 11 cm and the breadth is 5 cm.

(3)

7.2 Write down the formula for the surface area of a cube.

(1)

- 7.3 In the rectangular prism below, the length = 5 cm, the breadth = 3 cm and the height = 10cm.



Calculate the volume of the rectangular prism.

(3)

[7]

QUESTION 8

- 8.1 A mother is twice as old as her daughter. How old is the daughter if the mother is 64 years old?

(2)

- 8.2 The product of two prime numbers is 10. What is the difference between the two prime numbers?

(3)

[5]

TOTAL: 100

