External Measurement of Student Achievement

May 2010

Mathematics

Grade

TEST INSTRUCTIONS

- Please make sure that you have a separate answer sheet with this test paper.
- Please check that the answer sheet has your details printed on it. If not, print your name and date of birth on your answer sheet in the area provided.
- Please check that the subject and grade number on your answer sheet matches this question paper.
- This test has 40 QUESTIONS. Each question has four possible answers. Only one is correct.
- Please use a pencil only to shade in the answer bubble of your choice on your answer sheet.
- Choose the correct answer from A, B, C or D and shade this bubble in on your MATHEMATICS ANSWER SHEET.
- If you make a mistake then rub out your answer completely and shade in the bubble of your new answer.
- All answers must be marked on your ANSWER SHEET. You are allowed 1 hour and 10 minutes for this test.





1 What is the result of the expression $\frac{3}{4} - \frac{1}{3}$?



2

$p=\frac{r}{4}(7+3Q)$

What is the value of p when r = 2 and Q = 9?



3



In this isosceles triangle, what is the value of x?

- **A** 20
- **B** 40
- **C** 55
- **D** 70

4 Which number is largest?

A 2.3 × 10^{−1}
B 0.203
C 0.023

D 2.029×10^{-1}

5

The bar graph below shows the number of hours of sport played by 5 boys in one week.



How many more hours did Fariq play sport than did Malik?

A 4

B 5

C 6

6

D 10

Three friends competed in a high jump contest. Abdul jumped 145 cm. Faisal jumped 138 cm. Kahil jumped 128 cm.

What was the average (mean) height jumped?

- **A** 135 cm
- **B** 137 cm
- **C** 138 cm
- **D** 139 cm

Look at this triangular prism.



Which one of the following nets can be used to make this triangular prism?



A taxi charges 5 Dhs for the call and then 3 Dhs for each kilometre travelled. The distance from my home to the airport is 17 kilometres.

To take a taxi from home to the airport would cost

A $(5 + 3) \times 17$ Dhs **B** $5 + 3 \times 17$ Dhs **C** $(3 + 17) \times 5$ Dhs **D** $(5 + 17) \times 3$ Dhs

9

8

Which of these diagrams is **not** a net of a cube?



10

The cube root of **99** is

- A between 2 and 5.
- **B** between 5 and 15.
- **C** between 15 and 30.
- **D** more than 30.

11 It took Khalida 7 minutes to walk to the bus stop. She waited 4 minutes for the bus. The bus trip to school took 43 minutes, arriving at school at 8.02 am. What time did Khalida leave home? 7.08 am Α 7.15 am В 6.48 am С **D** 6.58 am 12 If t = 5, what is the value of $t^3 - t^2$? Α 1 5 В 25 С 100 D 13 In the diagram, AB = AC. В 130° CA

What is the value of z?

- **A** 115°
- **B** 120°
- **C** 125°
- **D** 130°

A hippopotamus was born July 5. The graph shows the changes in mass for the first 9 weeks of its life.



Mass of Baby Hippopotamus (first 9 weeks)

Which week did the baby hippopotamus gain the most mass?

- A between July 12 and 19.
- **B** between July 26 and August 2.
- **C** between August 9 and 16.
- **D** between August 30 and September 6.

The way a digit is displayed on a calculator is wrong.When a subtraction is keyed into it the display looks like this.The incorrect symbol is shown three times.

731# - 2#79 = 4#37

What is the value of the symbol \mathfrak{H} ?

- **A** 0
- **B** 2
- **C** 6
- **D** 8

16 Nada bought half a kilogram of strawberries.She counted the strawberries and found she had 20.

What is the average mass of a strawberry?

- **A** 20 g
- **B** 25 g
- **C** 40 g
- **D** 50 g

17

The three number sentences contain three different symbols. Each symbol corresponds to a different number.



③ + **③** = ⊅

₽ + 🙂 = 36

What number does the \mathbf{K} represent?

A 4B 6C 9

- **D** 12

18 A hexagonal prism is a shape which has 12 vertices.

How many faces and edges does it have?

- A 6 faces and 12 edges
- **B** 8 faces and 18 edges
- **C** 6 faces and 18 edges
- D 8 faces and 12 edges



Here is a map of an island.



What is the area of the island?

- A less than 14 square kilometres
- **B** 15 or 16 square kilometres
- C 17 or 18 square kilometres
- **D** more than 18 square kilometres
- 20 The diagram shows a number sentence in the form of a cycle. The number *S* returns unchanged.



What is the value of S?

- **A** 5
- **B** 10
- **C** 13
- **D** 21

21

Which one of these numbers is a **multiple** of 4?

- **A** 614
- **B** 164
- **C** 194
- **D** 914

12a – 18b

4 cm

8 cm

What is its perimeter?

46 cm

54 cm

64 cm

68 cm

A

В

С

D

All the angles in this figure are right angles.

D

8 cm



14 cm

12 cm

24

25

The times of sunrise and sunset through the year at Abu Dhabi are shown in the graph below.



What is the number of hours of daylight for the longest day?

- **A** 10 hours
- **B** 11 hours
- C 14 hours
- **D** 19 hours





- **B** $\frac{11}{99}$
- **c** $\frac{12}{90}$
- **D** $\frac{12}{99}$



The two pentagons shown are similar.



The area of pentagon ABCDE is 29 cm².

What is the area of the \boldsymbol{shaded} part?

- **A** 87 cm²
- **B** 232 cm²
- **C** 261 cm²
- **D** 290 cm²

28

What is the equation of the straight line that passes through the points (-3, 1) and (6, 4)?

A
$$3y = x + 6$$

B $3y = x - 6$
C $y = 3x + 2$
D $y = 3x - 2$





What is the length of PX?

- **A** 9 cm
- **B** 10 cm
- **C** 11 cm
- **D** 20 cm



This symmetrical 'V' shape is made from 2 parallelograms.

What is its area?

- **A** 30 cm²
- **B** 48 cm²
- **C** 64 cm²
- **D** 80 cm²



10 cm

This cylindrical can has a height of 10 cm. It holds 1 litre of water.

What is the diameter of the base?



32



Two of the angles in pentagon ABCDE are 120°. The other 3 angles are all equal. All 5 sides of the pentagon are the same length.

What is the value of x?

- **A** 20
- **B** 30
- **C** 35
- **D** 40



В

A

С

D



What is the value of x?

- **A** 18
- **B** 36
- **C** 58
- **D** 72



These graphs have been drawn without scales on the axes.

The equations of the lines P, Q and R, not necessarily in matching order are:

- (1) y = 2x + 2
- (2) y = 2x 2
- (3) y = -2x + 2

What are the correct labels for the graphs?

	Р	Q	R
Α	(1)	(2)	(3)
В	(2)	(1)	(3)
С	(3)	(2)	(1)
D	(3)	(1)	(2)