External Measurement of Student Achievement

April 2009

Grade 8

Mathematics

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, date of birth and student number (if known) 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.

Abu Dhabi Education Council

PEARSON

1 7 – (8 – 9) =

A –10

B –8

C 6

D 8

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2 This table shows some values of m and matching values of k where the rule is $k = 3m – 17$.

m	6	15	3	8	10
k	1	28	**?**	7	13

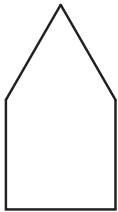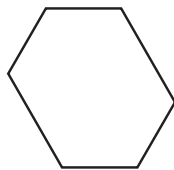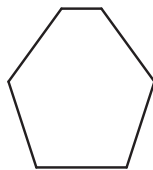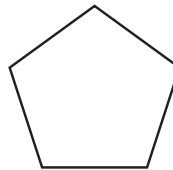What is the missing value of k?

A –16

B –8

C –6

D 8

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3 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?

A 7.08 am

B 7.15 am

C 6.48 am

D 6.58 am

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4 Which one of these shapes is an irregular pentagon?

A   **B**   **C**   **D**

5 Which **one** of these is a prime number?

A 85

B 87

C 89

D 91

6 If $a = 5$, $b = 3$, $c = 8$ and $d = 4$ then the value of $(\frac{c}{d} + b)$ is the same as the value of

A $7a$

B $a + 2$

C a

D $3a$

7 For a maths project, Ahmed measured the areas of six classrooms.
The results are shown in this table.

ROOM	4	7	19	I.T.	CRAFT	LIBRARY
AREA	95m²	110m²	95m²	146m²	220m²	504m²

What is the average (mean) area of these classrooms?

A 183 m^2

B 195 m^2

C 215 m^2

D 234 m^2

8 What is the value of z in this diagram?
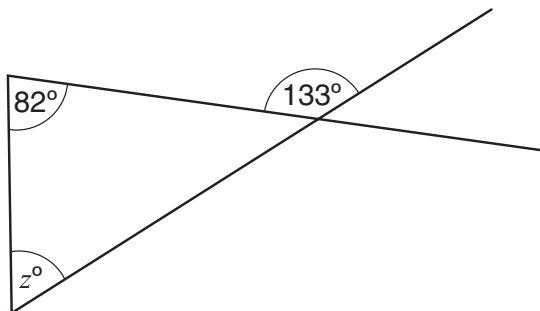
82°   133°   Diagram not to scale

z°

A 47

B 51

C 57

D 61

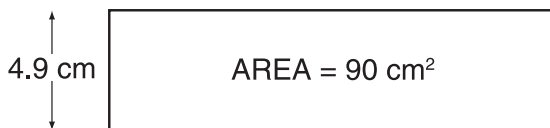**9** What is 8% of 800 Dhs?

A   64 Dhs

B   80 Dhs

C   100 Dhs

D   640 Dhs

10 If $t = 5$, what is the value of $t^3 - t^2$?
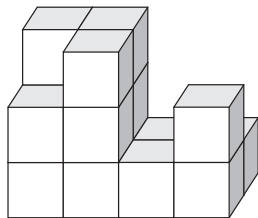
A   1

B   5

C   25

D   100

11 This rectangle has an area of 90 cm^2.

4.9 cm   AREA = 90 cm²

The perimeter of the rectangle is

A   less than 20 cm.

B   between 20 cm and 40 cm.

C   between 40 cm and 50 cm.

D   more than 50 cm.

12 Mona made a 4 ₃ 2 ₃ 3 rectangular-based prism.
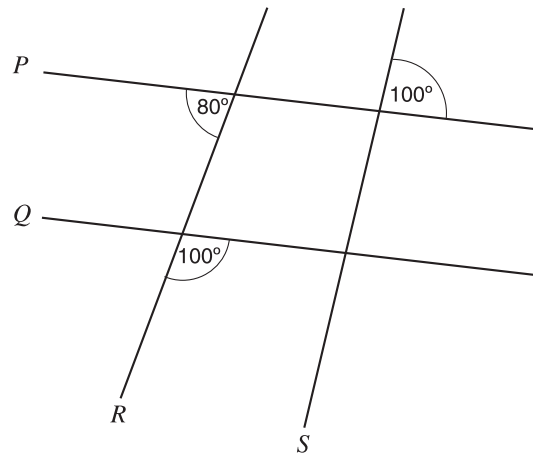Then she **removed** some of the cubes, as shown below.

How many cubes did she remove?

A   6

B   7

C   8

D   9

13 Four lines P, Q, R and S are shown on the diagram below:

P

80°

100°

Q

100°

R

S

Not to scale

Which two of them are parallel?

A P and S

B P and Q

C R and S

D R and Q

14 A DVD costs 40 Dhs.
There is a 20% discount today.

SALE 20% OFF DVDS

The new price of the DVD is

A 38 Dhs.

B 36 Dhs.

C 32 Dhs.

D 25 Dhs.

15 This table shows the first four pairs of numbers of a pattern:

First number	1	2	3	4
Second number	4	7	10	13

If the **Second number** is 22, then the **First number** is

A 7.

B 8.

C 9.

D 10.

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16 Ahmad left home at 7:20.
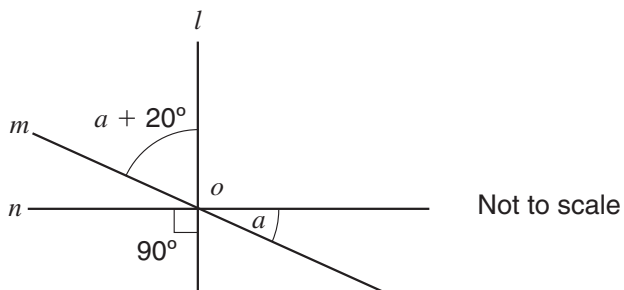He stopped for a swim for 40 minutes and arrived at school at 8:25.
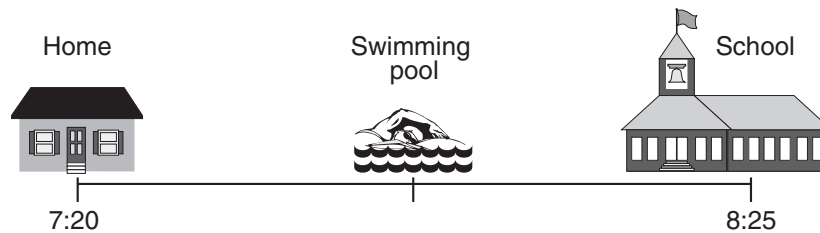
School finished at 15:30 and Ahmad went straight home.
Ahmad always walks the same route at the same pace.

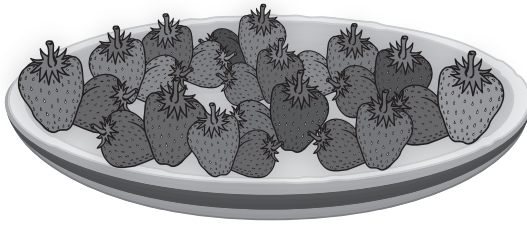He should be home at

A 15:50.

B 15:55.

C 16:05.

D 16:25.

---

17 The lines l, m and n intersect at point O, as shown:

Not to scale

The value of a is

A 70°

B 50°

C 35°

D 30°

18 Aisha collected 24 strawberries from her garden.

She gave $\frac{1}{3}$ of them to her brother and $\frac{1}{4}$ to her sister.

How many strawberries does Aisha have now?

A 12

B 10

C 8

D 6

---

19 Two of the numbers in this table are missing.

Number	5	2	(oval)
My rule = 7×( )+1	36	(rectangle)	64

Use *My Rule* to answer the question below.

The missing number in the rectangle + the missing number in the *oval =*

A 23

B 24

C 29

D 30

20 Sana drew a graph to show her visit to the library.

Sana's visit to the library
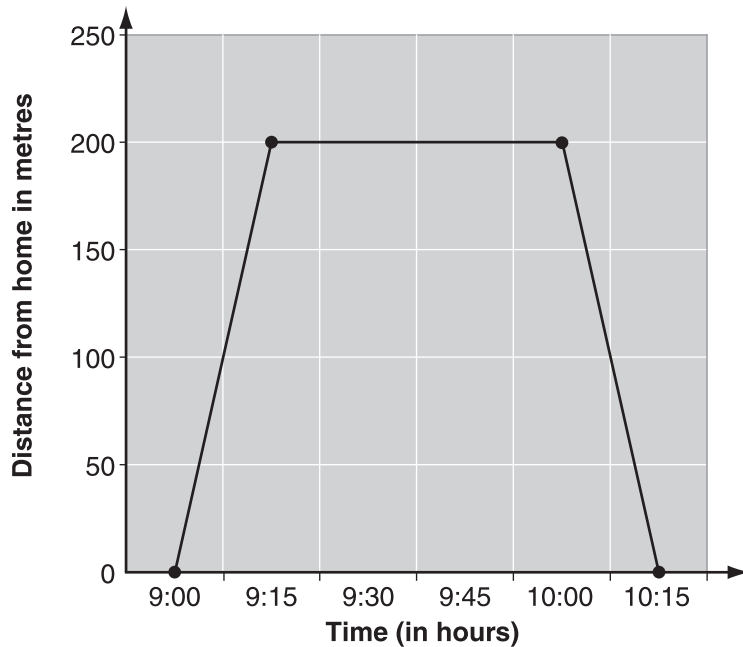
According to the graph, the total distance she walked was

A 500 m

B 400 m

C 300 m

D 200 m

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21 In the long jump competition Saeed came first and Omar came second.
Saeed jumped 4.1 m. He beat Omar by 0.23 m.

How far did Omar jump?

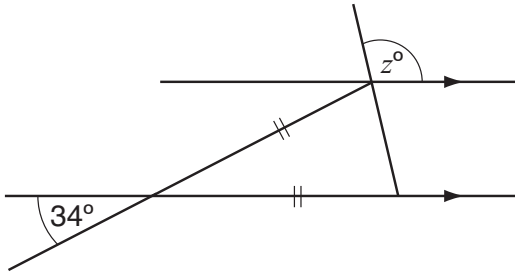**A** 3.83 m

B 3.87 m

C 3.93 m

D 3.97 m

---

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

A 614

B 164

C 194

D 914

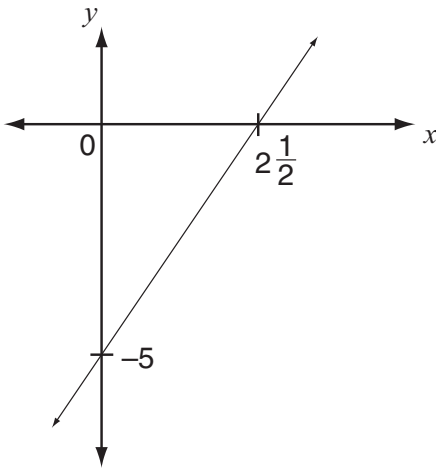**23** What is the value of *z* in this diagram?

A 102

B 107

C 134

D 146

24 Which one of these fractions is closest in value to 0.6?

A $\dfrac{2}{3}$

B $\dfrac{7}{11}$

C $\dfrac{11}{20}$

D $\dfrac{4}{7}$

25 Look at the graph below.

Which of these equations has been graphed?

A $y = \dfrac{1}{2}x - 5$

B $y = -5x + 2\dfrac{1}{2}$

C $y = 2\dfrac{1}{2}x - 5$

D $y = 2x - 5$

---

26 My car's navigation system tells me I am 850 m from a turnoff ahead, and 9.4 km from my home, still further ahead.

How far is it between the turnoff and my home?

A 900 m
B 1.1 km
C 8 550 m
D 8.65 km

---

27 A square $ABCD$ has triangle BEC added to form a symmetrical pentagon. The angle ABE is 154°.

What is the size of angle BEC?

A 52°
B 62°
C 64°
D 77°

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28   The square of 6.4 is between

A   0 and 3

B   3 and 25

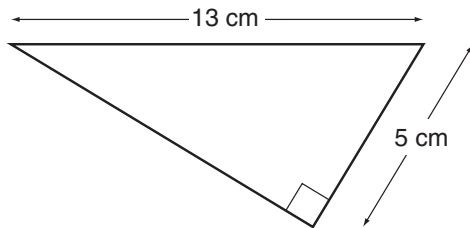**C**   25 and 40

D   40 and 50

29   Consider the following true statement:

$$3d - 7 = 5d + 11$$

What is the value of $3d - 7$?

A   −34

B   −4

C   16

D   20

30   What is the area of this right-angled triangle?

A   30 cm^2

B   32.5 cm^2

C   60 cm^2

D   65 cm^2

31 $\dfrac{2}{5} + \dfrac{1}{3} =$

A $\dfrac{2}{15}$

B $\dfrac{3}{8}$

C $\dfrac{7}{15}$

D $\dfrac{11}{15}$

32   The formula for calculating J is

$$J = \frac{3Q - 4}{m}$$

If $Q = 6$ and $m = 2$, the value of J is

A   7

B   12

C   16

D   30

---

33   This figure is made of a square, an equilateral triangle and a right-angled triangle.
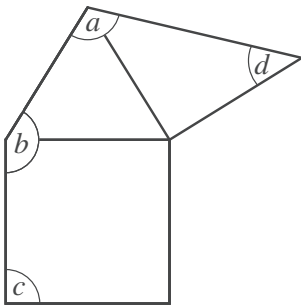
Which of these angles is 150°?

A   *a*

B   *b*

C   *c*

D   *d*

---

34   Look at this timetable for Redha's sport training.

Timetable for training	
Day	**Time**
Monday	50 min
Tuesday	1 hour
Wednesday	40 min
Thursday	45 min
Friday	70 min

His average (mean) time of training each day is

A   66 minutes.

B   53 minutes.

C   50 minutes.

D   44 minutes.

35 If $k = 5$ and $m = 3$, which one of the expressions below has a value of 22?

A $mk - 13$

B $k^2 + 4m$

C $2(k + 2m)$

D $\dfrac{8k}{6m}$

---

36 Aisha's teacher gives a weekly vocabulary quiz with ten words.
Aisha's scores for the quiz have included 10, 7, 6 and 5.
She has also scored 9 two times and 8 four times.

Aisha's average (mean) score for her weekly vocabulary quiz is

A 7.0
B 7.5
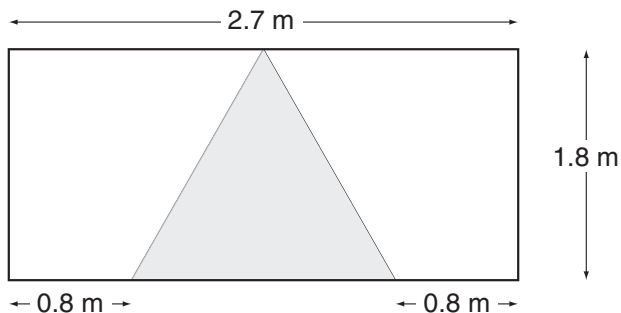**C** 7.8
D 8.0

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37 Simplify this expression

$$4x - 15y - 5x + 2y$$

A $x - 13y$
B $x - 17y$
C $-x - 13y$
D $-x - 17y$

---

38 What is the area of the shaded triangle?

2.7 m

1.8 m

0.8 m   0.8 m

A 0.99 m^2
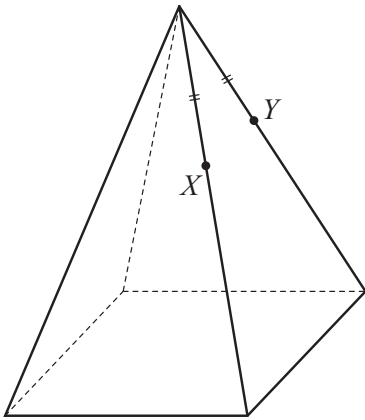**B** 1.44 m^2
C 1.98 m^2
D 2.43 m^2

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39 The formula for the **area** *(A)* of a regular hexagon with side-length S is $A = 2.6S^2$.
The perimeter of a regular hexagon is 9 cm.

What is the best estimate of the area of this hexagon?

A 6 cm^2
B 8 cm^2
C 23 cm^2
D 210 cm^2

40 This square pyramid will be cut into two unequal parts with a vertical cut.

This vertical cut will go through points X and Y as marked on the diagram.

The six faces on the larger part will be

A 1 rectangle, 2 triangles and 3 trapeziums.
B 2 trapeziums, 2 triangles and 2 rectangles.
C 1 quadrilateral, 1 trapezium, 2 triangles and 2 rectangles.
D 1 trapezium, 1 rectangle, 2 triangles and 2 quadrilaterals.