Y4 OC SAMPLE Mathematics Questions

Addition and Subtraction

It takes an inlet pipe 10 minutes to fill an empty container to 67 of its capacity.

How many more seconds will the inlet pipe take to finish filling the container?

A. 110 seconds
B. 100 seconds
C. 90 seconds
D. 80 seconds
E. 60 seconds

Ans:B

Given:
10 minutes = 6/7 of its capacity ← fill an empty

Solution:
Assume capacity = 70 L
60 L per 10 mins = 60/10 = 6 L per min

1 - (6/7) = 1/7 of its capacity more =
1/7 = X/70 = 10 L ← more

10/6 = 5/3 mins
(5/3)(60) = **100 seconds**

Unit Conversion

A rabbit can run 10 metres per second.

How fast can the rabbit run in kilometres per hour?

A. 3.6 kilometres per hour
B. 6 kilometres per hour
C. 36 kilometres per hour
D. 60 kilometres per hour
E. 360 kilometres per hour

Ans: C

Given:
10 m/s

Solution:
10 x 60 x 60 = 36 000 m/hr
36 000 / 1000 = **36 km/hr**

Money Problems

A group of 22 boys and 24 girls only had 10-cent coins in their purses. All the boys in the group had the same number of 10-cent coins and all the girls in the group had the same number of 10-cent coins.

If the total value of all the coins in the group was $16, how many 10-cent coins did one boy have?

A. 1 coin
B. 2 coins
C. 3 coins
D. 4 coins
E. 5 coins

Ans: D

Given:

22 boys
24 girls
Total = $16

Solution:

16/0.1 = 160 pcs ← 10 cents coins in total
B(22) + G(24) = 160
Substitute the choice B = Choices
G = Whole number ← because there is no decimal coins

Choice D
B = **4**

Time, Date, and Direction

The number of people lining up waiting to buy tickets for the Comic-Con doubles every hour.
At 2:00 PM, there were 80 people in line waiting to buy tickets for the Comic Con.

How many people were in line waiting to buy tickets for the Comic Con at 10:00 AM earlier that day?

A. 2 people
B. 5 people
C. 10 people
D. 20 people
E. 40 people

Ans: B

Given:
2:00 PM = 80 people
10:00 AM = ?

Solution:
10:00 AM - 2:00 PM = 4 hours
80 / 2 = 40 people ← 1 hour
40 / 2 = 20 people ← 2 hours
20 / 2 = 10 people ← 3 hours
10 / 2 = 5 people ← 4 hours
or
80 / 2^4 = 5 people

Therefore the answer is **5 people**

Speed Distance and Time

Gerry can run 3.75 kilometres in 15 minutes.
In how many minutes will it take him to run 1 kilometre at the same average speed?

A. 1 minute
B. 2 minutes
C. 3 minutes
D. 4 minutes
E. 5 minutes

Ans: D

Given:
3.75 km = 15 mins

Solution:
15/3.75 = **4 mins**

Numbers, Patterns, and Sequences

The passcode to a lock is a three-digit number whose hundreds digit is equal to the sum of the tens digit and the ones digit.

How many possible passcodes are there?

A. 54
B. 45
C. 36
D. 27
E. 18

Ans: A

Given:

The passcode to a lock is a three-digit number whose hundreds digit is equal to the sum of the tens digit and the ones digit.

Solution:

101,110 ,211 ,202 ,220 ,303 ,330,321,312, 404, 440, 422, 431,413, 505, 550, 532, 523,541,514,606,660,633,651,615,642,624,707,770,734,743,752,725,761,716,808,880,844,853,835,826,862,871,817,909,990,981,918,927,972,963,936,954,945.

Therefore the answer is **54**

Ratio and Proportion

At the start of the hour, the ratio of the number of men to the number of women in the room was 2 to 5. By the end of the hour, no one left the room and two men went into the room. If by the end of the hour, the ratio of the number of men to the number of women in the room was 1 to 2, which of the following was the number of men in the room at the start of the hour?

A. 1
B. 2
C. 4
D. 8
E. 10

Ans: D

Given:
2:5
after an hour 2 men went into the room
then ratio = 1:2

Solution:
Let X = ratio multiplier
(2X + 2) / 5X = ½
4X + 4 = 5X
X = 4

Men = 2X = 2(4) = **8 men**

Perimeter and Area

Denise bought a coffee table shaped like a regular pentagon. If one side of the table measured 2 metres, what is the perimeter of the table that Denise bought?

A. 4 metres
B. 8 metres
C. 10 metres
D. 15 meters
E. It cannot be determined.

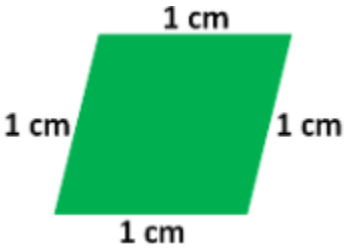
Ans: C

Given:
Pentagon shaped table
1 side = 2 m

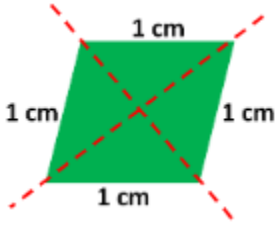
Solution:
Pentagon = 5 sides
Perimeter = 2(5)
Perimeter = 10 m

Line of Symmetry, Grid, Folding, and Nets

Line of Symmetry, Grid, Folding, and Net



A. None
B. One
C. Two
D. Four
E. Eight



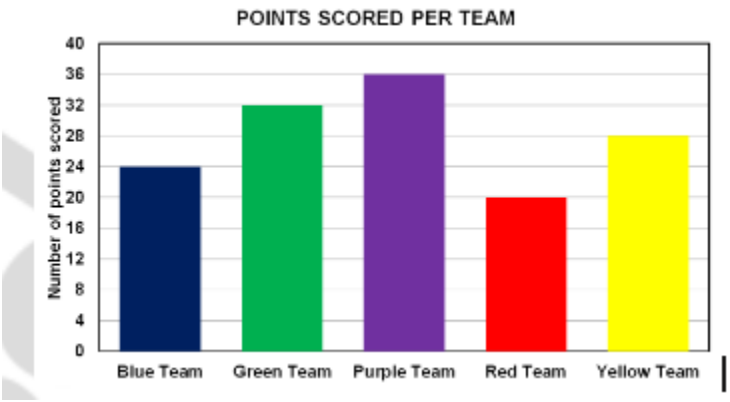
Ans:

Line of symmetry are shown above

Therefore the answer is **choice C**

Data and Statistics

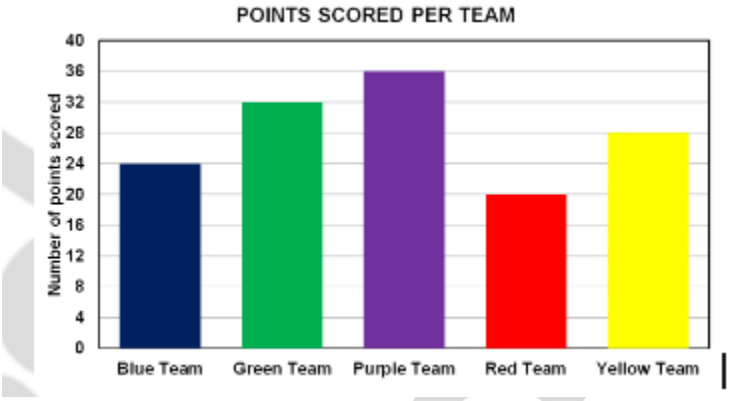
The bar graph below shows the number of points scored by each team at the Inter-School Quiz Bee



How many more points did the Purple Team score than the Red Team?

A. 4 points
A. 10 points
A. 11 points
D 12 points
E 16 points

Ans: E
GIVEN



Solution:
Purple = 36 points
Red = 20 points

36 - 20 = **16 points**