

YEAR NINE Mathex 2014

Team

QUESTION 1

What is the 30th number in the sequence

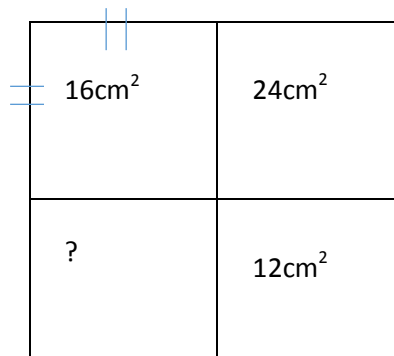
4, 7, 10,

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QUESTION 2

Calculate the missing area



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QUESTION 3

Trees are planted 12m apart.

How many trees will be needed for a row 4.8km?

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QUESTION 4

What is the obtuse angle between the hands of a clock at quarter past 7?

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QUESTION 5

What number is 60 more than $\frac{1}{4}$ of itself?

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QUESTION 6

A car was sold for \$7200. This was a 20% decrease from its original purchase price. What was the cars original purchase price?

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QUESTION 7

A farm has a paddock with sheep and ducks in it. There are 70 legs and 24 heads in the paddock. How many ducks and how many sheep are in the paddock.

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QUESTION 8

Complete this sequence

a) -9, 6, -4, __

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QUESTION 9

The mean weight of the 8 starting forwards in the All Blacks is 109 kgs. The six heaviest forwards mean weight is 110kg. If the lightest two forwards weigh the same amount, what is each players' weight?

QUESTION 10

Martian maths has operation symbols ¥ and £ .

In earth maths $a\text{¥}b = a \times b + 3$ and $a\text{£}b = a + 2b$

The order of operation for Martian maths is the same as the order of operation in earth maths.

Find the earth maths value of $6\text{¥}(8\text{£}3)$

QUESTION 11

I have three children not all of the same gender. What is the probability that I have two girls and one boy?

QUESTION 12

The five rings in the Olympic flag are Blue, Black, Red, Yellow and Green.



In how many different ways could the colours of the rings be arranged?

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QUESTION 13

A conservationist studying the effects of rats on an island bird sanctuary needs to estimate the rat population. She captures 50 rats, tags them and lets them go. One week later she captures 100 rats and finds that five of them have been tagged. She is now able to estimate the rat population. What is her estimate?

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QUESTION 14

If 125 small cubes are glued together to make a large cube. How many of the original 125 cubes can still be seen?

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QUESTION 15

A fireman walks up a set of stairs at an average speed of 3km/hr and down at an average speed of 6km/hr. What is the fireman's average speed over the entire time?

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QUESTION 16

If it takes 6 painters 15 days to paint a house, how long would it take 10 painters?

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QUESTION 17

If the length of the edge of a square is increased by 40%, what is the percentage increase in the area of the square?

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QUESTION 18

What is the smallest number that gives a remainder of 1 when divided by 2,3,4,5, and 6?

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QUESTION 19

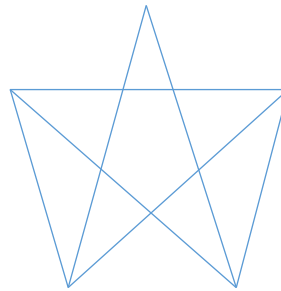
List all the numbers less than 100 with exactly three factors.

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QUESTION 20

How many triangles are there in this figure?



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20. 18
19. 4, 9, 25, 49
18. 61
17. 96 %
16. 9 days
15. 4 km/hr
14. 98
13. 1000 rats
12. 120
11. $\frac{2}{6}$
10. 87
9. 106 kg
8. $\frac{8}{3}$ or 2.666...
7. 11 Sheep and 13 Ducks
6. \$9000
5. 80
4. 127.5°
3. 401 (trees)
2. 8cm^2
1. 91

