

YEAR TEN Mathex 2014

Team

Question 1.

$$84^2 \div 7^2 + 2^2 - 1^2$$

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Question 2.

In the school athletics 400m hurdles race there is 40m before the first hurdle and 36m after the last hurdle. The 8 hurdles between the first and last are equally spaced. What is the distance between the hurdles?

YEAR TEN Mathex 2014

Team

Question 3.

If a pile of ten \$5 notes is 1mm high, how much money is in a pile of \$5 notes that is 1.5m high?

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Question 4

In a netball tournament there are 7 teams. Each team plays each other team twice. How many games are played altogether?

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Question 5.

Write 85 as the sum of 2 squares in two different ways.

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Question 6

If 6 students send 12 text messages in 60 seconds, how long will it take 2 students to send 36 text messages?

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Question 7

A set of special dice is made by a teacher for a classroom game. The faces are labelled with the numbers 5, 7, 11, 13, 17 and 19.

How many different totals can be made by tossing the two dice together and adding the numbers on the upper faces?

YEAR TEN Mathex 2014

Team

Question 8.

Andrew is 4 years older than Dan, who is 4 years older than Sam, who is 4 years older than cousin Matt, who is half the age of his cousin Andrew.

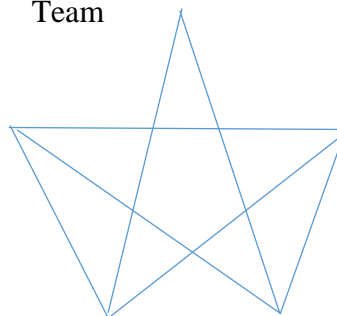
How old is each person?

YEAR TEN Mathex 2014

Team

Question 9

How many triangles are there in this figure?



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Question 10

A truck with a $\frac{1}{2}$ load weighs 5 tonnes. The same truck with a $\frac{1}{3}$ load weighs 4 tonnes.
What is the weight of the truck with a full load?

YEAR TEN Mathex 2014

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Question 11

A rectangle is 4.5 times as long as it is wide. If the perimeter is 88cm, what is it's area?

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Question 12

90% of students like tomatoes and 84% of students like bananas. 79% of students like both tomatoes and bananas. What % of students don't like either?

YEAR TEN Mathex 2014

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Question 13

Two 50c coins are placed right next to each other. If one coin is rotated once around the second coin (without slipping), how many revolutions will it complete?

YEAR TEN Mathex 2014

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Question 14

All but 6 of the animals are horses, all but 4 of the animals are cows, and all but 8 of the animals are pigs. How many animals are there?

YEAR TEN Mathex 2014

Team

Question 15

Sandy's run average for his first 12 one day cricket matches is exactly 21.5 and at the end of the cricket season it is exactly 41.125. How many more matches did he play and how many more runs did he score.

YEAR TEN Mathex 2014

Team

Question 16

If you reverse the digits in Mr Wang's age you get the age of Mrs Tauli.

But Mr Wang is older than Mrs Tauli.

When you multiply the difference between their ages by eleven you get the sum of their ages.

How old are Mr Wang and Mrs Tauli?

YEAR TEN Mathex 2014

Team

Question 17

On one side of a portion of a long straight street the house numbers run consecutively in even numbers. The sum of these numbers is 666. What is the highest house number?

YEAR TEN Mathex 2014

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Question 18

Write $\frac{1}{81}$ as a decimal to 9dp.

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Question 19

Prime numbers that read the same backwards and forwards are known as palindromic primes.

e.g. 727 is a palindromic prime.

There are 7 multi-digit palindromic primes less than 350.

Name them.

YEAR TEN Mathex 2014

Team

Question 20

Determine the missing number in the sequence below.

13 57 91 11 31 51 ?

Year 10 Mathex 2014 ANSWERS

Q 20. 71 (consecutive numbers arranged in pairs)

Q19. 11, 101, 131, 151, 181, 191, 313

Q18. 0.012345679 (NOTE – no 8)

Q17. 334 (332, 334) OR 224 (220, 222, 224)
OR 82(66, 68, 70, 72, 74, 76, 78, 80, 82)

Q16. Mr Wang 54 and Mrs Tauli is 45

Q15. Either 4 more matches and 400 more runs
OR 12 more matches and 729 more runs
OR 20 more matches and 1058 more runs

Q14. 9 animals altogether

Q13. 2 revolutions

Q12. 5%

Q11. 288cm^2

Q10. 8 tonnes

Q9. 18

Q8. Andrew is 24, Dan is 20, Sam is 16 and Matt is 12

Q7. 15

Q6. 9 minutes OR 540 Seconds

Q5. $9^2 + 2^2$ OR $7^2 + 6^2$

Q4. 42 games

Q3. \$75000

Q2. 36m (10 hurdles so 9 'spaces')

Q1. 147