45.77

1. What is the sum of				
One twenty-fifth halved				
25% of 25				
A quarter of a quarter of a century				
The third prime number squared				

$\frac{1}{50} + 6\frac{1}{4}$ $\quad 12\frac{1}{2}$ $\quad 25$

$\frac{25}{25}$

0.02 ✓
6.25 ✓
12.50 ✓ (8.77)

2, 3, 5

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5
57.52 0.02 6.25 ~~56.25~~ 25	56.25			

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2. Jack and Jill are going to the local pool to swim. It is 2.5km from their home. They leave home at the same time: Jack is walking at a constant speed of 5km/hr whilst Jill is biking an average of 15km/hr. How long does Jill have to wait before jack joins her at the pool? Give your answer to the nearest minute.

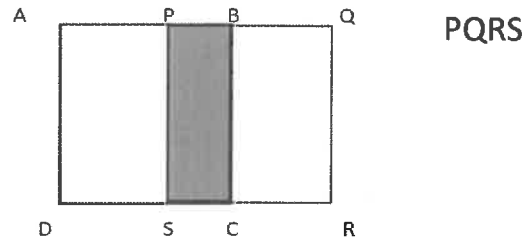| Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

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3. What is the angle between the hour hand and the minute hand of an analogue clock at 4.20pm?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

4. The total weight of a box with 20 plates and 30 cups is 4.8kg. The total weight of the box with 40 plates and 50 cups is 8.4kg. What is the total weight of the box with 10 plates and 20 cups?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

5. Two congruent squares ABCD and have side lengths 15cm. They overlap to form the 15cm by 25cm rectangle AQRD as shown. What percentage of the area of AQRD is shaded?

PQRS

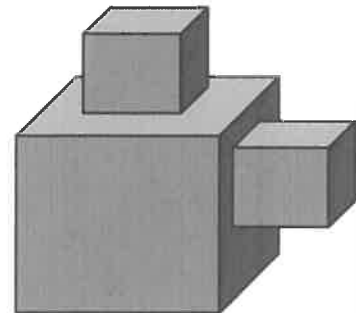| Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

6. The sum of two prime numbers is 85. What is the product of these two numbers?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

7. There is a list of seven numbers. The average of the first four numbers is 5, and the average of the last four numbers is 8. The average of all seven numbers is $6\frac{4}{7}$. What is the number common to both sets of numbers?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

8. A cube has side lengths 5 cm. Suppose we glue two cubes onto it as shown, each with side lengths 2cm. What is the surface area of this new shape?

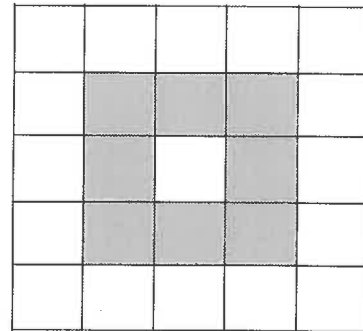| Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

9. Granny has taken up deep sea fishing! Last week, she caught a fish that was so big she decided to chop it into 3 bits in order to weigh it – head, body and tail. The tail weighed 9kg, the head weighed as much as the tail plus one third of the body. The body weighed as much as the head and tail together. How much did the whole fish weigh?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

10. The school chess team consists of 2 boys and 3 girls. A photographer wants to take a picture of them to publish in the local newspaper. She decides to have them sit in a row, with the two boys on the ends and the three girls in the middle. How many such arrangements are possible?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

11. If you were to extend this pattern by first adding a border of grey tiles around it, then a border of white tiles around that, what would be the ratio of grey tiles to white tiles?
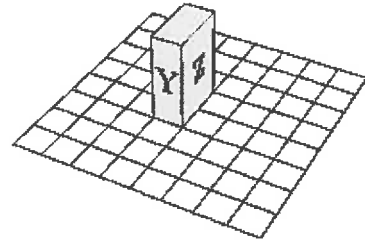
Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

12. In a town of 351 adults, people own a car, or a motorcycle, or both. If 331 adults own cars, and 45 adults own motorcycles, how many of the car owners do not own a motorcycle?
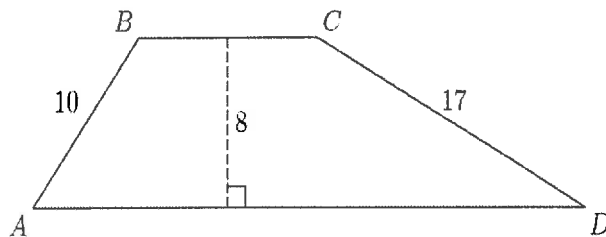
Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

13. A 1 x 2 x 3 block is placed on an 8x8 square board, as shown. The 1x2 face on the bottom has an X on it. It is rolled over an edge without slipping, onto a 1x3 face Y, then onto the 2x3 face Z. It is rolled onto X, Y and Z again in that order. How many different squares has the block occupied on the board altogether? (including its start and end positions)

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

14. The area of trapezium ABCD is 164 cm^2. The altitude is 8cm, AB is 10cm and CD is 17cm. What is the length BC in cm?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

15. Ara and Shea were once the same height. Since then Shea has grown by 20% and Ara has grown half as many centimetres as Shea, who is now 168cm tall. How tall (in metres) is Ara now?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

16. The football shown is made by sewing together 12 black pentagonal panels and 15 white hexagonal ones. There is a join wherever two panels meet along an edge. How many joins are there?

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

17. What time was it 2016 minutes after midnight on June 16, 2016? Give your answer with full date and time.
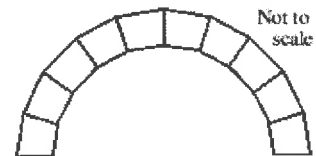
Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

18. Ten stones of identical size and shape are used to make a semicircular arch, as shown in the diagram. Each stone has a cross section in the shape of a trapezium, with three equal sides. What is the size of the smallest angles in the trapezium?

Not to scale

Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

19. The value of 12 factorial (written 12!) is the product of all the numbers 1 to 12 multiplied together. Find the maximum number of times that 5 divides into 12!				
Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

20. James and Henri are staying at a holiday park with a spa. They ask the owner how long it takes to fill the spa. He replies: "if you are just using cold water – 30 minutes. If you are using hot water only – 45 mins. If you run them both together …I am not sure". What fraction of the spa could they fill if they ran both taps for 10 minutes?				
Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5

2016 yr 9

yr 9   Qu11

Next time don't need "2016"

Answers

Question 20	20	5/9 or five ninths or 0.55 or 0.56 or 0.55555555 etc
Question 19		95800320
Question 18	18	81 degrees
Question 17		June 17, 2016, 9.36am
Question 16	16	90
Question 15		1.54m
Question 14	14	10 cm
Question 13		19
Question 12	12	306
Question 11		31.49 32:49
Question 10	10	12
Question 9	9	54kg
Question 8	8	182 cm^2 (need units) Why?
Question 7	7	6
Question 6	6	166 (the numbers are 2 and 83)
Question 5	5	20% (accept 20)
Question 4	4	3kg (accept 3000g)
Question 3	3	10 degrees
Question 2	2	20 minutes
Question 1	1	37.52