11+ Test Practice 14 minutes

Mathematical Reasoning 2

Calculate the correct answer for each question.

1. In a box of chocolates the ratio of caramel chocolates to all other flavours is 2 : 7. If Dad buys 4 boxes of 63 chocolates to give as gifts to friends. How many caramels is that in all?

2. How many sixths are in 36?

3. Margo enjoys playing with Lego. With her savings she bought space themed Lego for £40.40, and an extra bag, that was 3/8ths of this price. Originally she had £90. How much did she have after buying both purchases? Round your answer to the nearest pound.

4. In a leap year, if we discount the months of July, August, September and November, how many days are there?

5. A tap fills a tank at the rate of 25ml per 30 seconds. If the tank holds 5 litres, how long will it take to fill it? Give your answer in minutes.

6. The cost of a karate course is £21 gear, plus £9 per lesson. If a lesson is cancelled, a refund of 50% of a single lesson is returned. In the winter of 2019, Ava bought the gear and attended an eleven week course. Unfortunately, due to bad weather, a lesson was cancelled. How much did she pay in total? Round your answer to the nearest pound.

7. $9 \times 5 < 4M$. What is the smallest whole number that M could be?

8. In a book collection of 240 books, 1/3 of them are science-fiction, and 40% are biographies. How many are neither science-fiction or biographies?

9. Lori used an app to make savings on her groceries. The total she pays is £125. This is 1/3 cheaper than the full price. What was the price before the reduction? Round this answer to the nearest pound.

10. The tally chart below shows the number of pets owned by students in class 5B. Use this chart to work out what percentage of pets are not dogs, cats or hamsters?

Pet	Tally	Frequency
Dog	𝍸 𝍸 I	
Cat	𝍸 III	
Hamster	II	
Other	𝍸 IIII	

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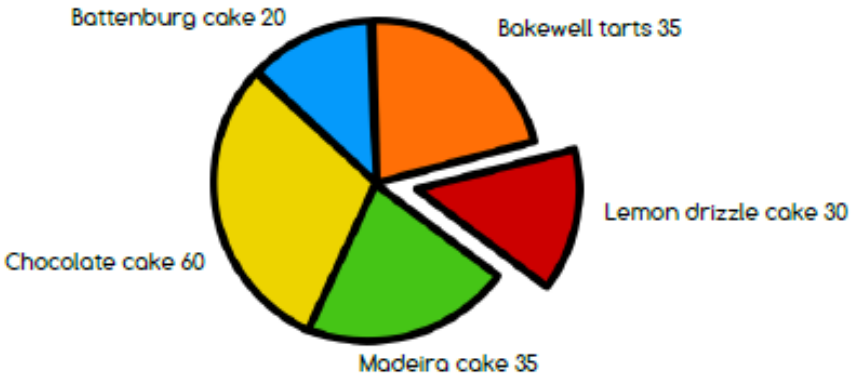
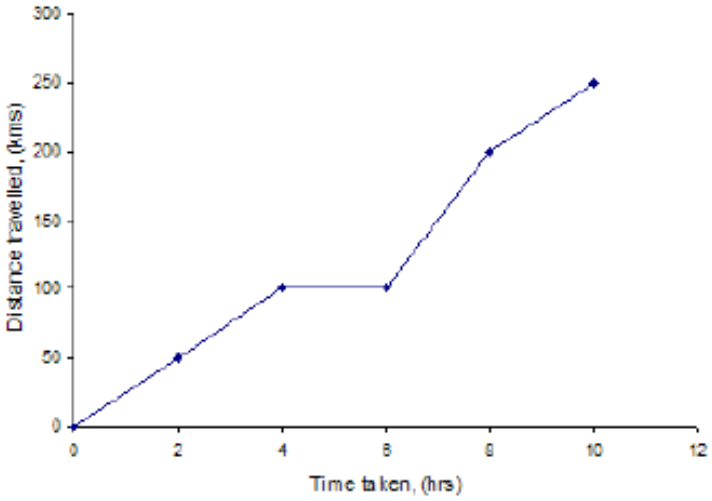
11. The pie chart below shows the number of cakes sold by Ian's Bakery Products. What fraction of these are lemon drizzle cakes? Give the fraction in its simplest form and do not use a protractor.



12. The graph below represents a car journey made by John between London and Cardiff.



A. How far did he travel, in km, for the first 6 hours of his journey?

B. If he left home at 10.00 am what time did he stop for a break?

C. What was his average speed for the last four hours of his journey, in km/h?

13. What is the volume of a cylinder when the combined areas of the circular faces is 64cm squared, and the length 12 cm?

14. How many vertices do the following shapes have when added?

A cuboid, triangular prism and a square based pyramid

15. The area of a triangle is 84cm. Its height is 7 cm, what is its base length?

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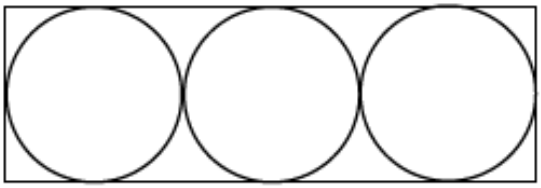
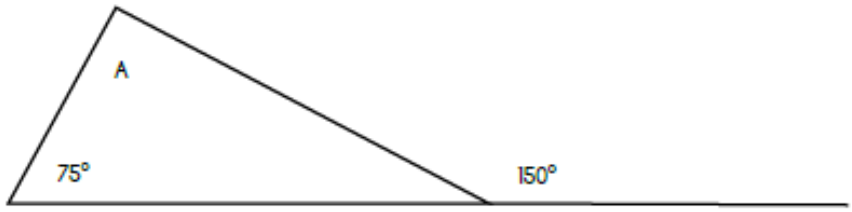
16. The circles below are all identical. If the radius of each circle is 3cm what is the perimeter of the rectangle shown?

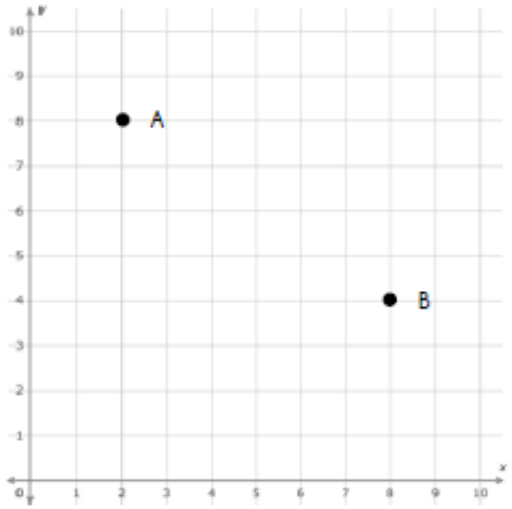


17. Work out the angle A in the diagram below which is not drawn to scale.



(not drawn to scale)

18. The graph below shows the two points A and B. What are the co-ordinates of the mid point of A and B?



19. Add the numbers of vertices, to faces, to edges of a hexagonal prism. What is the total?

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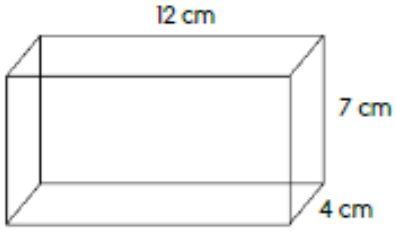
20. Aliens have recently arrived on earth and enjoy shopping in town. An alien buys shoes for its 34 feet, and hats for its 9 heads.

Shoes cost £12 per pair, and hats are £4.00 each. He also tries his first ever ice cream for £5.00. How much does he spend? Don't worry about left and right feet on the alien – he can re-shape them as necessary!

21. If a number squared is 25, what is it cubed?

22. The diagram below show a cuboid 4cm x 7cm x 12cm. What is the volume of this cuboid?



23. How many lines of reflectional symmetry does a kite have?

24. 4b + 32 = 800. How much is b worth?

25. The mean test score for five children taking a test is 10, but one of the test scores is missing. What is the missing score?

12 3 14 ? 10

26. What is 3/8 as a decimal multiplied by 1000?

27. How many lines of reflectional symmetry does a parallelogram have?

What is the next number in each of the following sequences?

28. 5 15 13 39 37 ?

29. 200 100 120 20 ?

30. 1 8 5 11 7 12 ?

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Answers

1. 196
2. 216
3. £34
4. 244
5. 100
6. £116
7. 12
8. 64
9. 187
10. 30%
11. 1/6

12A. 100

12B. 2pm

12C. 37.5

13. 384
14. 19
15. 24
16. 48
17. 75
18. (5,6)
19. 38
20. £245
21. 125
22. 336
23. 1
24. 192
25. 11
26. 375
27. 0
28. 111
29. 40
30. 7

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