11 Plus Essex CSSE – Maths B

Name: _____

Date: _____

Read the instructions carefully.

1. You will have **60 minutes to answer questions.**
2. You will need a pencil and a ruler.
3. Calculators are not allowed.
4. Write your answers on the lines provided on this paper.
5. Use any spare space on the page for working out.
6. Make sure to include units in your answers where necessary.
7. Try to answer as many questions as you can.
8. If you cannot answer a questions, leave it and move on to the next one.

Your time will start when you turn over the page.

1. Fill in the missing numbers to make the equations correct.

a. $(5 + 3) \times \_\_\_\_\_ = 32$

b. $236 - (24 + 12) \times ¼ = ½ \times \_\_\_\_\_$

c. $4 \div ⅔ = 2^2 + \_\_\_\_\_$

d. $10^2 - (24 + \_\_\_\_\_) = (25 + 17) \div 3$

e. $(¾ + 0.5) \times 8 = \_\_\_\_\_ \div 10$

2. Let A = 6 and C = 10.

If $A^2 + B^2 = C^2$, what is the value of B?

_____

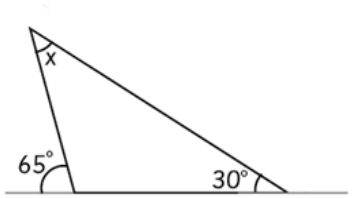
3. What is 16% as a fraction in its simplest form?

_____

4. A coin is thrown 24 times. How many times is it likely to land on tails?

_____

5. If angle x is 125 degrees, how big is the remaining angle inside the triangle?



_____

6. A rectangle has a perimeter of 26cm. Its length is 6cm. What is its width?

_____

7. Breeda splits 2.7kg of sweets into 100 bags. How much does each bag weigh?

_____

8. The timetable below shows departure times, duration and prices for boat trips running daily from the St Ives harbour.

Departure time	Duration	Price (Adults)	Price (Children)
10:00 AM	1 hour	£15	£10
12:00 PM	1.5 hours	£20	£15
2:00 PM	2 hours	£25	£20
4:00 PM	1 hour	£15	£10

a. If a family of 2 adults and 3 children take the boat trip at 12:00 PM, what will be the total cost for the trip?

_____

b. The 1-hour boat trip is an 8km tour around the coast. If the 1.5-hour boat travels at the same speed, how many km is the total journey?

_____

c. Compare the price of a 1-hour trip at 10:00 AM with a 1.5-hour trip at 12:00 PM for an adult and a child. How much more does it cost for each person on the longer trip?

_____

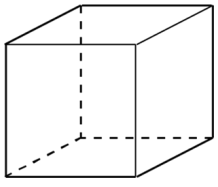
d. If the ratio of adults to children on the 4:00 PM boat trip is 3:2, and the total number of tickets sold is 20, how many tickets were bought by adults?

_____

9. Jagga plays a board game with friends and it takes 174 minutes. Roughly how many hours did it last?

_____

10. Use the cube below to answer the questions.



a. How many faces does this cube have? _____

b. How many vertices does this cube have? _____

c. How many edges does this cube have? _____

11. Emma is baking cookies.

a. She uses 2.25 cups of flour for one batch of cookies. How many cups of flour does she need for 4 batches?

_____

b. If each batch makes 12 cookies, how many cookies will she have after baking 6 batches?

_____

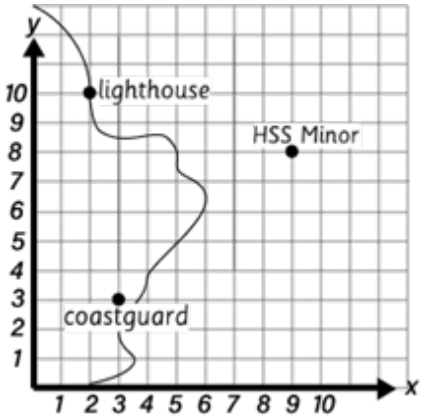
c. After making 6 batches, Emma gives ⅔ of the cookies to her friends. How many cookies is she left with?

_____

12. Honey got 12 out of 48 on a history test. What percentage did Honey get?

_____

13.



a. What are the coordinates of the lighthouse?

_____

b. What are the coordinates of the coastguard?

_____

c. If the 3 points on the graph are joined, it would form a triangle. What type of triangle would be formed?

_____

14. A rectangular swimming pool is being filled with water.

a. The pool is 10 metres long, 6 metres wide, and 2 metres deep. What is the volume of the pool?

_____

b. If the pool is filled at a rate of 1.5 cubic metres per hour, how many hours will it take to fill the pool?

_____

c. The pool holds approximately 120,000 litres of water. The ratio of pool cleaning solution to the total volume of the pool is 1:240. How much pool cleaning solution needs to be added to the whole pool? Give your answer in litres.

_____

15. A toy store is having a sale.

a. A toy car originally costs £30, but there is a 15% discount. What is the sale price of the toy car?

_____

b. If a customer buys 3 toy cars at the sale price, what is the total cost?

_____

c. A toy robot is reduced in the sale from £50 to £35. What is the percentage decrease in price?

_____

16. Tom is saving money to buy a bicycle.

a. He saves £15 each week. How much will he save in 10 weeks?

_____

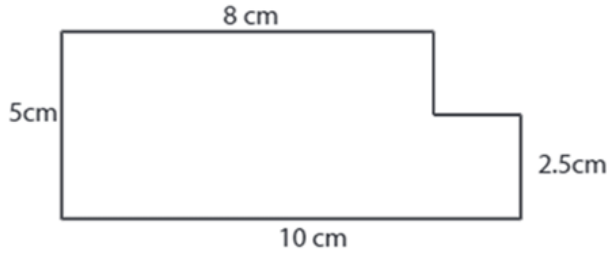
b. The bicycle costs £180. How many weeks does Tom need to save to buy the bicycle?

_____

c. If Tom has already saved £45, how many more weeks does he need to save to buy the bicycle?

_____

17.



a. Calculate the perimeter of the shape above. _____

b. Calculate the area of the shape above. _____

18. **At a basketball game, the attendance was 18,621.**

a. Round 18,621 to the nearest 10.

_____

b. Round 18,621 to the nearest 100.

_____

c. At another basketball game, the attendance is given as 15,400 to the nearest 100. What is the greatest possible attendance at this match?

_____

19. The data below shows the number of stickers Polly collected each day for a week.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8	9	13	7	6	13	12

a. What is the median?

_____

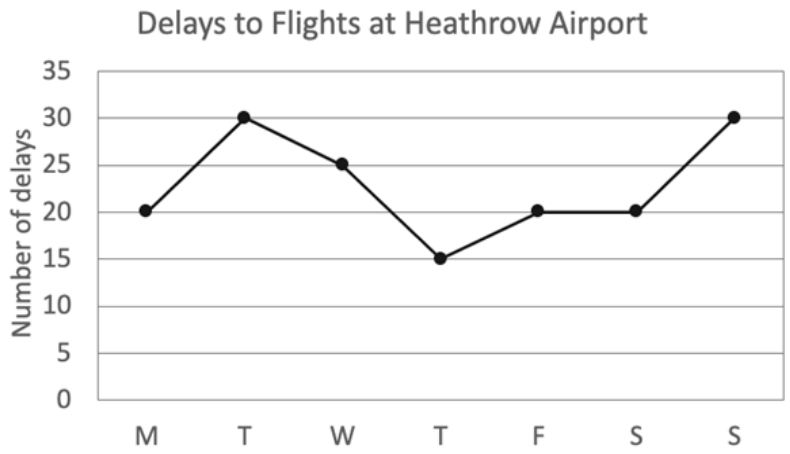
b. What is the range?

_____

c. What is the mode?

_____

20. Use the graph below to answer the following questions.



a. How many delays were there on Tuesday?

_____

b. Which day had the fewest delays?

_____

c. Which two days had the same number of delays?

_____

21. Chandni has one £2 coin, two £1 coins, three 50 pence coins, four 5 pence coins and three pennies. How much money does she have altogether?

_____

22. The local library is moving into a new building. Each packing box holds 80 books. They have 780 books in the non-fiction section. How many boxes will they need?

_____

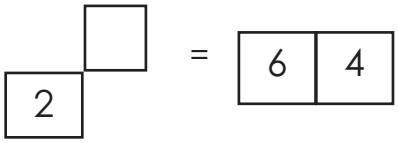
23. At a pie-eating contest, each of the 9 contestants ate ⅓ of a huge pie each. How many pies were eaten in total?

_____

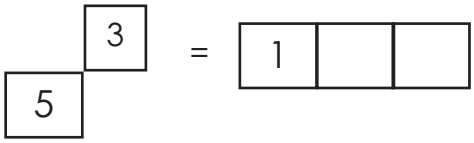
24. **4^4 means 4 × 4 × 4 × 4.**

Fill in the boxes to complete the calculations correctly.

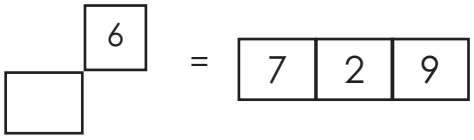
a.



b.



c.



25. **A perfect number** is one where the sum of the factors (excluding itself) is the number. For example, 28 is a perfect number because the factors of 28 (excluding the number 28) are 1, 2, 4, 7 and 14, which add up to 28.

An abundant number is one where the sum of the factors (excluding itself) is greater than the number. For example, 12 is an abundant number because the factors of 12 (excluding itself) are 1, 2, 3, 4 and 6, which add up to 28.

A deficient number is one where the sum of the factors (excluding itself) is less than the number. For example, 8 is a deficient number because the factors of 8 (excluding itself) are 1, 2 and 4, which add up to 7.

a. **There are many prime numbers that are perfect numbers.**

Is the statement above true or false?

_____

b What is the first perfect number?

_____

c. Is 5 a perfect, abundant or deficient number?

_____

End of Test

