



ALL IN ONE PLACE BASE CAMP MERCHANT TAYLORS' SCHOOL MATHEMATICS SPECIMEN PAPER 1

INSTRUCTIONS

Time allowed: 60 minutes

Answer as many questions as possible. Some of them are easy at the start and become more difficult. You should show all your working on this question paper.

1. What does the digit 3 in 45300 stand for?

Answer: _____
[1 mark]

2. What is the third odd number greater than 16?

Answer: _____
[1 mark]

3. What prime number is between 30 and 35?

Answer: _____
[1 mark]

4. What is the smallest number that is divisible by 2, 3, 5, and 7?

Answer: _____
[1 mark]



5. A wave has a frequency of 20 Hz. This means that 20 waves will pass a given point in 1 second. How many waves pass a point in 3 minutes?

Answer: _____

[1 mark]

6. You think of a number and multiply it by 7.
You add 6 to the product and get 27. What number were you thinking of?

Answer: _____

[1 mark]

7. Write down the next two terms in the sequence.

7 11 15 19 23

Answer: _____

[1 mark]

8. Write down the next two terms in the sequence.

41 42 44 47 51

Answer: _____

[1 mark]

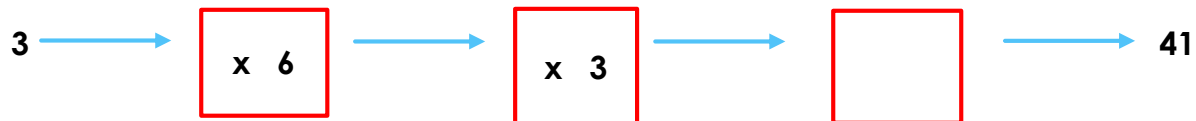
9. Write down the next two terms in the sequence.

2 4 4 16 6 36

Answer: _____

[1 mark]

10. What is the missing operation in the box?

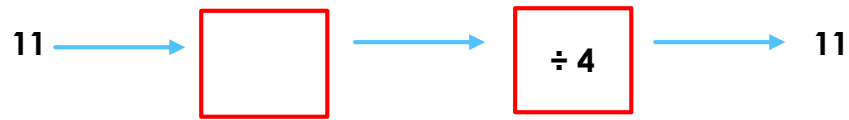


Answer: _____

[1 mark]

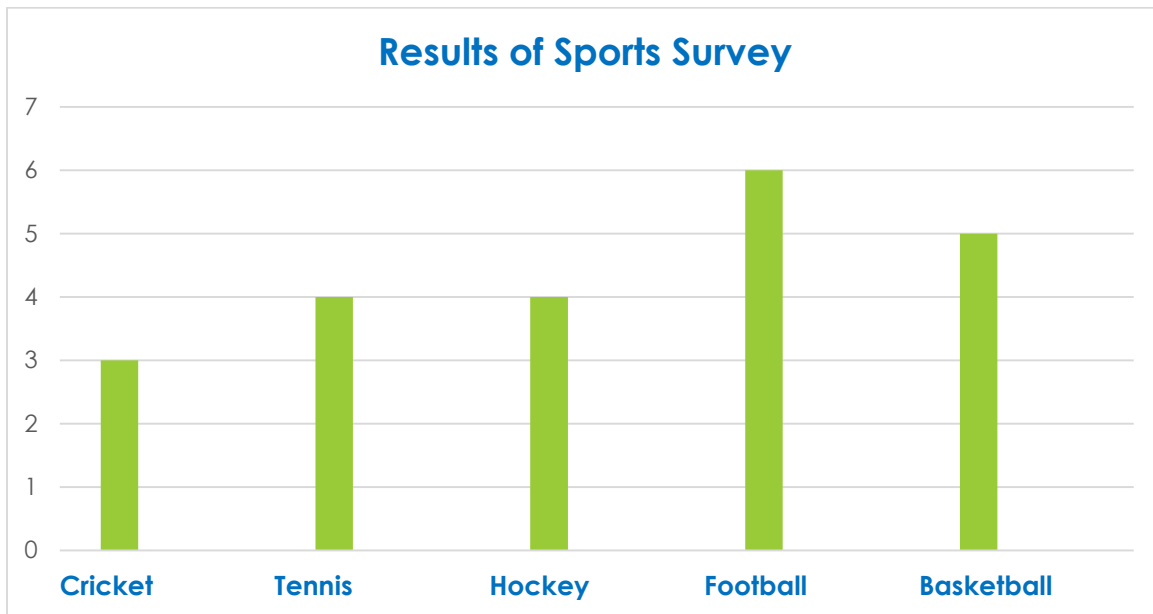


11. What is the missing operation in the box?



Answer: _____
[1 mark]

13. A class survey was conducted on which sports pupils liked.
 The bar chart shows the results of the survey.



Which sport was the second most popular?

Answer: _____
[1 mark]



15. James did nine Science tests in a school year. The table shows his percentage for each test.

Test	Percentage
1	65
2	82
3	71
4	63
5	55
6	61
7	70
8	73
9	85

What was his mean mark in the nine tests? Express your answer as a whole number.

Answer: _____
[1 mark]

16. Using the same data from Question 15, what was James's median mark in the nine tests?

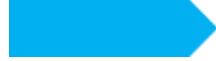
Answer: _____
[1 mark]

18. The table shows the sales of the two representatives for a 3 month period.

Month	April	May	June
Susan	14	12	17
Terry	18	8	23

Calculate the difference between the amounts earned by Susan and Terry from April to June.

Answer: _____
[1 mark]



19. You roll a fair six-sided die. What is the probability of rolling a one?

Answer: _____
[1 mark]

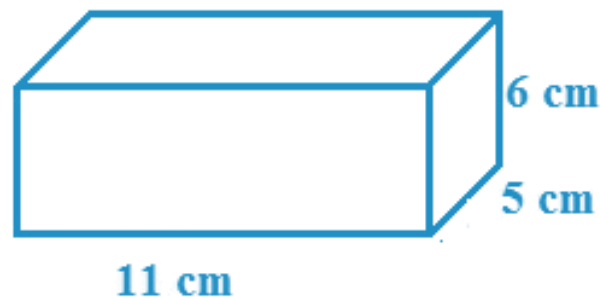
20. You roll a fair six-sided die. What is the probability of rolling a prime number?

Answer: _____
[1 mark]

21. You roll the die 100 times. How many times would you expect to get a number of 3 or less?

Answer: _____
[1 mark]

23. The diagram below shows a cuboid.

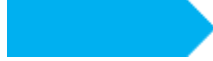


Calculate the area of the top or plan view of the cuboid.

Answer: _____ cm^2
[1 mark]

24. What is the total surface area of the cuboid in the previous question?

Answer: _____ cm^2
[2 marks]



30. Find the size of the angle, in degrees, turned by **hour** hand of the clock as it moves from 10 to 11.

Answer: _____
[1 mark]



31. Find the size of the angle, in degrees, turned by **minute** hand of the clock as it moves from 10 to 3.

Answer: _____
[1 mark]

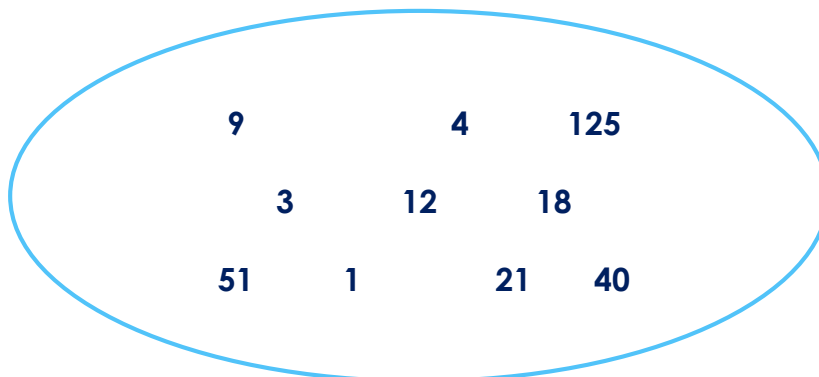


32. Given that $a = 3$, $b = -3$ and $c = 6$, find the value of this expression:

$$4a - 2c$$

Answer: _____
[1 mark]

35. Complete the table using numbers from the oval.



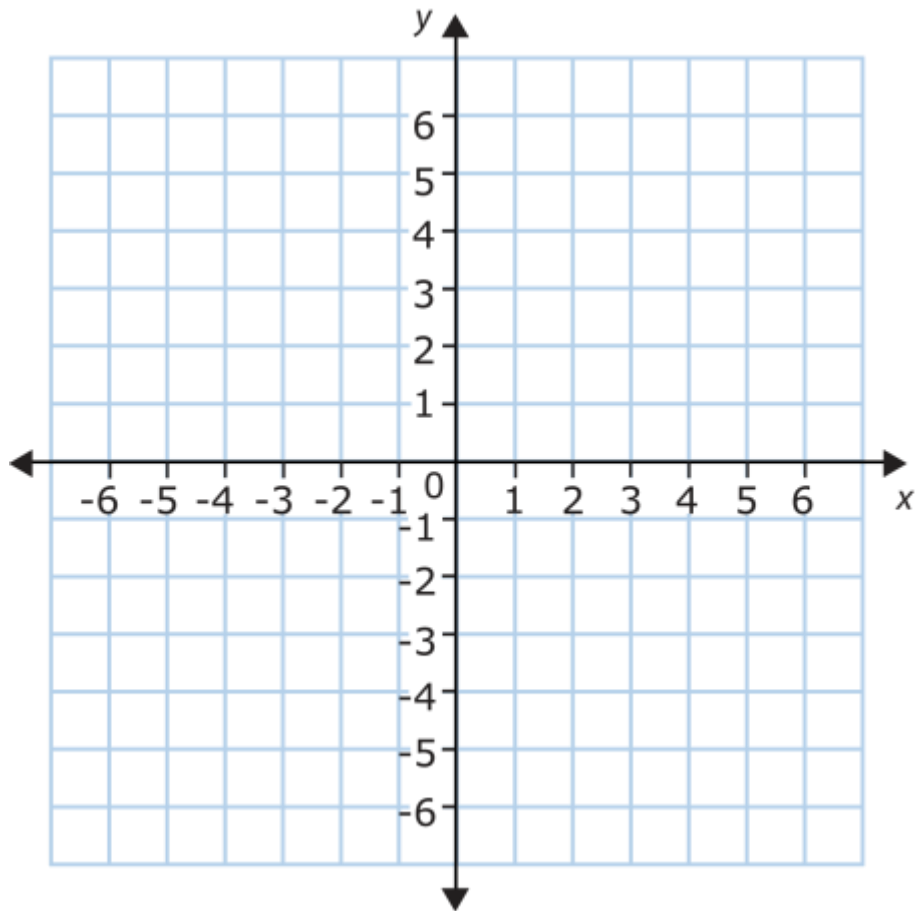


Square numbers	Cube Numbers	Prime numbers	Factors of 36

[4 marks]

36. On the **x-y** coordinate plane, plot these points:

- (4, 2)
- (-3, 2)
- (-3, -2)



[2 marks]



40. A rectangle has a perimeter of 150 cm. The width of the rectangle is half its width. Calculate the length and width of the rectangle.

Length: _____ cm

Width: _____ cm

[2 marks]

41. A rectangle has an area of 72 cm² and a perimeter of 30 cm. Calculate the length and width of the rectangle.

Length: _____ cm

Width: _____ cm

[2 marks]

44. List all the positive integers less than 30 that have THREE factors, other than 1 and itself.

EXAMPLE

$$28 = 28 \times 1 \quad \text{OR} \quad 28 = 14 \times 2 \quad \text{OR} \quad 28 = 7 \times 2 \times 2$$

28 is one integer because it has factors 2, 2 and 7. Do not include this number in your answer.

Answer: _____

[2 marks]

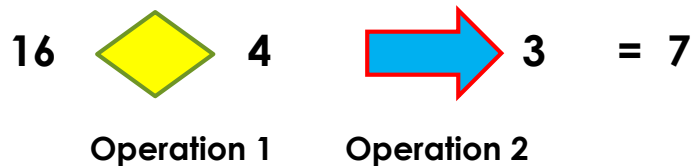
45. 3 apples and 3 oranges costs £3.00. 3 apples and 1 orange costs £2.20. How much would it cost to buy 5 apples and 4 oranges?

Answer: _____

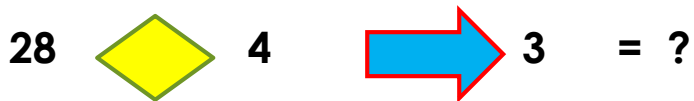
[3 marks]



46. The number 16 comes 7 after two operations are applied to it as shown below.



Using the same operation for the diamond and the triangle, find the missing number.



Answer: _____
[1 mark]

48. Examine this timetable for trains departing from Norwich to Liverpool Street.

Norwich	D	0500	0520	0630	0710	0755	0805	0835
Stowmarket	D	0531	NS	0658	0740	NS	0835	0903
Ipswich	A	0541	0053	0709	0751	NS	0846	0913
Ipswich	D	0543	0054	0710	0752	0828	0847	0915
Manning Tree	D	0553	NS	0721	0802	0830	NS	0925
Colchester	D	0604	0610	0732	0812	NS	0906	0935
Chelmsford	D	0620	NS	NS	0825	NS	0923	NS
Liverpool Street	A	0654	0700	0826	0903	0933	1016	1025

KEY

D = depart

A = arrive

NS = no stop

How long does it take the 0755 train to reach Liverpool Street station?

Answer: _____
[1 mark]

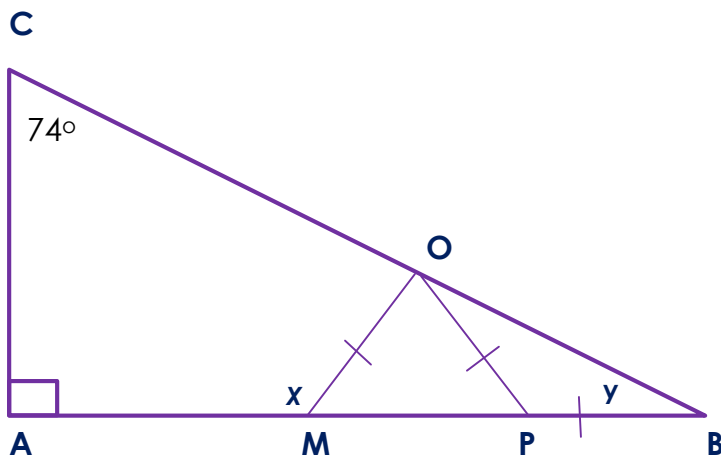
50. A shopkeeper sells fruit and vegetables. The produce is sold by the kilogram. The table shows the prices of some of the fruit and vegetables.

Produce	Price/kg (£)
Potatoes	0.55
Tomatoes	0.80
Peaches	1.50
Papaya	2.20

If a customer buys 5 kilograms of potatoes and pays with a £10 note, how much change should they get?

Answer: £ _____
[1 mark]

54. Find the sizes of the angles **x** and **y** in triangle **ABC**.



Answer: x = _____ °
[1 mark]

Answer: y = _____ °
[1 mark]



56. The table shows the hourly temperatures in degrees Celsius on a particular day.

Time	Temperature (°C)
11:00	20.4
12:00	21.3
13:00	22.2
14:00	23.1
15:00	24.0

The temperature increases at the same rate until 19:00. What is the temperature at 19:00?

Answer: _____ °C
[1 mark]

60. A mystery number has 4 different odd-numbered digits.

- two of the digits are prime numbers
- the product of the prime number digits is 15
- the thousands digit is a factor of 3
- the smallest digit is in the thousands place

Using the information above, there are 6 possible numbers. The mystery number is the largest number. What is the mystery number?

Answer: _____
[3 marks]

END OF EXAMINATION

CHECK ALL OF YOUR WORK CAREFULLY