

Name :

Dean Close School



13+ Entrance Examination :

MATHS

Time allowed : 1 hour

Answer all questions in the spaces provided and show all your working.

Calculators are NOT to be used.

13+ Entrance Examination in Mathematics (out of 50 marks)

**One hour. No calculators allowed. Answer as many questions as you can.
All working is to be done on this paper.**

1. From these numbers: 16, 18, 19, 39, 49, 53, write down

a) a multiple of 7

Answer.....(1)

b) a factor of 32

Answer.....(1)

c) a prime number

Answer.....(1)

2. John claims that if he multiplies his weight in stones by 5 and then adds 3, he will get his weight in kilograms.

a) If John weighs 7 stones, use this formula to estimate his weight in kilograms.

Answer.....(2)

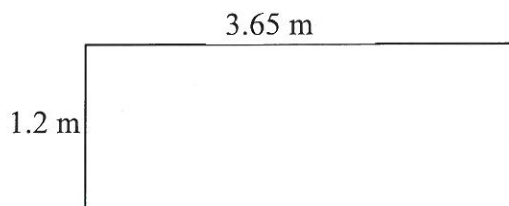
b) If Barry weighs 63 kg, use John's formula to find his weight in stones.

Answer.....(2)

3. Four pupils estimate their heights as: 1.5m, 12cm, 50mm, 11ft
Which of these do you think is most likely to be correct?

Answer.....(1)

4. Find the perimeter of this rectangle:



Answer.....(2)

5. Calculate

a) $2\frac{1}{4} - \frac{1}{2}$

Answer.....(2)

b) $1\frac{3}{5} \times \frac{1}{4}$

Answer.....(2)

Simplify these fractions as much as possible

c) $\frac{12}{20} =$

Answer.....(1)

d) $\frac{25}{30}$

Answer.....(1)

6. Work out

a) $(13 - 7) \times 3 =$

Answer.....(1)

b) $13 - 7 \times 3 =$

Answer.....(1)

7. If $P = 2r - 3t$, find P when $r = 1.5$ and $t = 0.4$

Answer.....(2)

8. Divide £40 in the ratio 2 : 3

Answer.....(2)

9. Solve the equations

a) $5x + 1 = 31$

Answer.....(2)

b) $4x - 3(12 - 5x) = 21$

Answer.....(3)

10. 40% of the pupils in my school are girls. If there are 1400 pupils altogether, find the total number of boys in my school.

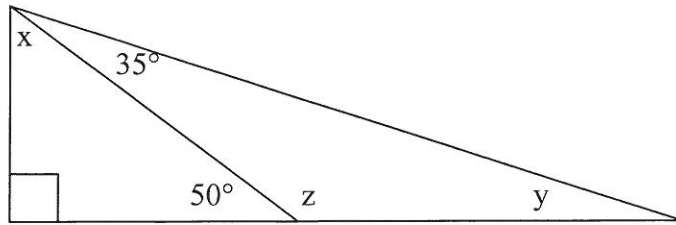
Answer.....(2)

11. Complete this table of equivalent fractions, decimals and percentages:

Fraction	Decimal	Percentage
		35%
	0.6	
$\frac{2}{5}$		

(3)

12. Find the angles x , y , and z in this diagram, which is not drawn to scale.



Answer: $x = \dots\dots\dots y = \dots\dots\dots z = \dots\dots\dots$ (3)

13. a) How many lines of symmetry does an isosceles triangle have?

Answer (1)

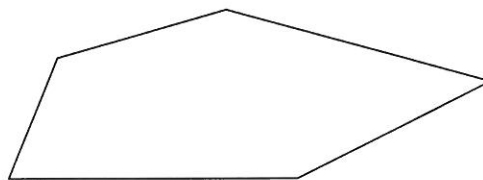
- b) What is the order of rotational symmetry of an equilateral triangle?

Answer (1)

14. Taking $\pi = 3.1$, calculate the area of a circle of diameter 8 cm.

Answer (2)

15. What is the name of the polygon drawn below?



Answer..... (1)

16. The ages (in years) of 16 people were as follows.

19, 15, 21, 12, 33, 17, 32, 5, 15, 9, 40, 5, 8, 19, 3, 6

Group them in the frequency table below.

Age range	Tally	Frequency
1 – 10		
11 – 20		
21 – 30		
31 - 40		

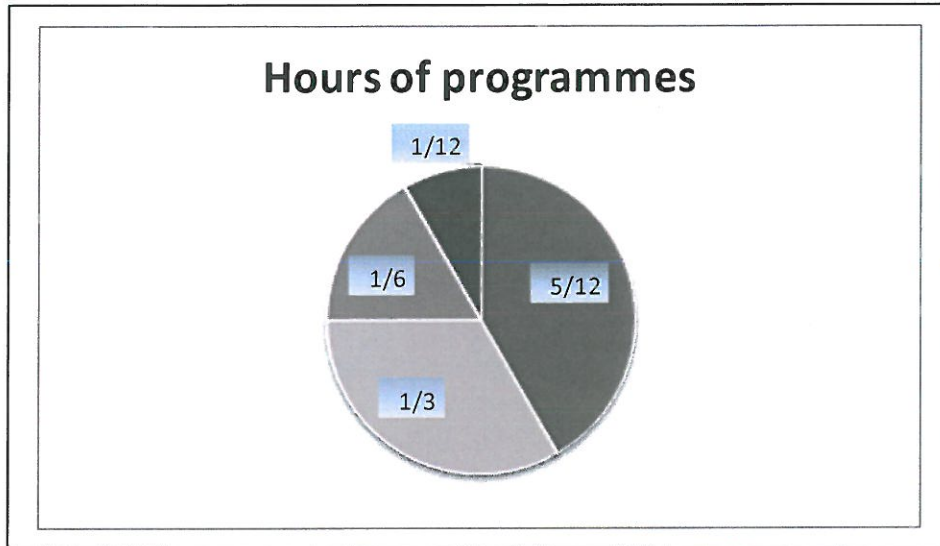
(2)

17. Mary threw a dice 8 times, scoring 4, 4, 5, 1, 2, 3, 6, 3

Calculate the mean, median and mode.

Answers: Mean = (1) Median = (1) Mode = (1)

18. This pie chart shows the time allocated, in decreasing order of size, to Sports, News, Soaps and Other types of programmes over a 24-hour period. Work out how many hours were allocated to each type.



Answers: Soaps..... News..... Sports..... Other..... (2)

19. The chance of triplets being all boys is $\frac{1}{8}$. What is the chance that there will be at least one girl?

Answer..... (1)

20. a) Two girls are to be chosen from Jill, Kristy, Laura and Mel by drawing lots. Using their initial letters, complete this list of all possible choices:

J&K J&L

Answer: other choices are..... (1)

- b) What is the probability that both Kristy and Mel will be chosen?

Answer (1)

End of the exam. Now go back and check your work thoroughly.