TEST 1
NO CALCULATORS

WRITE YOUR ANSWERS, **INCLUDING ROUGH WORKING**, ON THESE SHEETS

1. Use the fact that $28 \times 63 = 1764$ to write down the answers to the following.

   a) 2.8×6.3
   ..... [1]

   b) 14×630
   ..... [1]

   c) $176.4 \div 63$.
   ..... [1]

2. Find the value of

   a) $5^3 \times 2^2$

   .....
   .....
   .....
   ..... [2]

   b) $21.4 - 12.63$.
   .....
   .....
   ..... [1]

3. a) Concert tickets, for a part of a theatre known as the stalls, cost £x each. What, in terms of x, is the cost of 5 tickets for the stalls?
   ..... [1]

   b) A ticket for another part of the theatre known as the circle costs £2 less than a ticket for the stalls. What, in terms of x, is the cost of one ticket for the circle?
   ..... [1]

   c) What, in terms of x, is the cost of 8 tickets for the circle?
   ..... [1]

   d) Find, in terms of x, the total cost of 5 tickets for the stalls and 8 tickets for the circle, simplifying your answer as far as possible.
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   .....
   .....
   ..... [2]

4. Write down the following numbers correct to 2 significant figures.

a) 0.02681

…… [1]

b) 7824

…… [1]

5. In a game, a player throws two fair dice, one coloured red the other blue.

The score for the throw is the larger of the two numbers showing. For example:
if the red dice shows 4 and the blue dice shows 2, the score for the throw is 4;
if the red dice shows 3 and the blue dice shows 5, the score for the throw is 5.

a) Complete the following table to show all the possible scores.

		BLUE DICE					
		1	2	3	4	5	6
RED DICE	1	1	2	3	4	5	6
	2	2	2	3	4	5	6
	3	3	3				
	4	4	4				
	5	5	5				
	6	6	6				

[2]

b) i) What is the probability that a player scores 4 ?

…… [2]

ii) What is the probability that a player scores less than 4 ?

…… [1]

A player wins a prize by getting a score of 3 or less.

c) Bob plays the game once. What is the probability that he wins a prize?

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…… [1]

d) i) 360 people each play the game once. Approximately how many would you expect to win a prize?

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…… [2]

ii) It costs £1 to play the game once. The prize for winning is £1.50. If the 360 people each play the game once, approximately how much profit do you expect the game to make?

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…… [2]

6. *ABCD* is a kite. Calculate the size of the angle marked *x*.

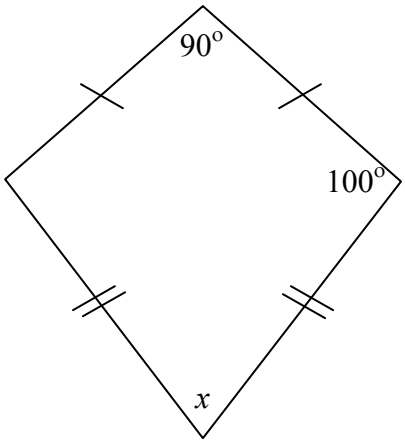

Diagram not drawn to scale.

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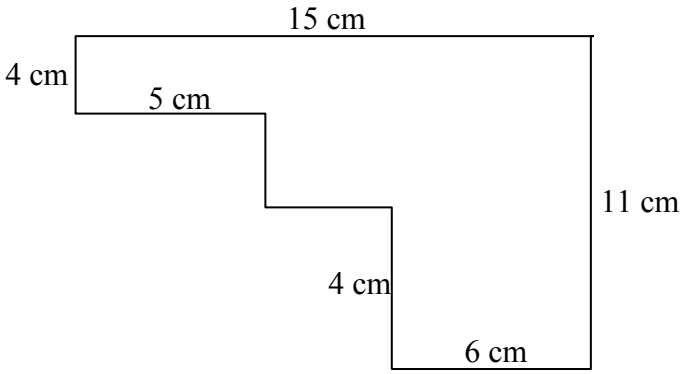
……
…… [3]

7.



Clearly indicating the units, calculate

a) the perimeter of the above figure

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……
……
…… [3]

b) the area of the above figure.

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…… [3]

8. A shopkeeper buys televisions at £220 each. At what price must the shopkeeper sell the televisions in order to make a profit of 35% ?

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…… [3]

9. Given that $h = \frac{12(a-11)}{m}$, find the value of h when $a = 5$ and $m = -3$.

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…… [3]

10. Express 900 as a product of prime numbers in index form.

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…… [3]

11. Solve the following equations.

a) $7x - 3 = 33 - 2x$.

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…… [3]

b) $12x - 6 = 2(4x + 8)$.

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…… [3]

12. Jill and John invest some money and share any profit made in the ratio of 4:5.

a) How much does Jill get when they make a profit of £720.

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…… [2]

b) On another occasion, John received £125. How much profit were they sharing?

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…… [2]

13. A random sample of people in a certain school revealed the following information.

	Left handed	Right handed
Boys	40	60
Girls	30	50

There are 230 boys and 320 girls at the school. Use the results of the sample and these totals to find an estimate for the total number of pupils in the school who are left handed.

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…… [4]

ANSWERS.

1. a) 17.64 b) 8820 c) 2.8.
2. a) 500 b) 8.77.
3. a) $5x$ b) $x - 2$ c) $8(x - 2)$ or $8x - 16$
   d) $13x - 16$.
4. a) 0.027 b) 7800.
5. a)

BLUE DICE

RED DICE	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	2	3	4	5	6
3	3	3	3	4	5	6
4	4	4	4	4	5	6
5	5	5	5	5	5	6
6	6	6	6	6	6	6

   b) i) $\frac{7}{36}$ ii) $\frac{9}{36} = \frac{1}{4}$ c) $\frac{9}{36} = \frac{1}{4}$
   d) i) 90 ii) £225.
6. $x = 70^{o}$.
7. a) 52 cm b) 114 cm^2.
8. £297.
9. 24.
10. $2^2 \times 3^2 \times 5^2$.
11. a) $x = 4$ b) $x = 5.5$.
12. a) £320 b) £225.
13. 92 boys, 120 girls. Total = 212.