

1) Expand and simplify

$$9 - 4(2x - 3) - 2(x + 5)$$

2) Calculate

$$2\frac{1}{5} - 1\frac{5}{6}$$

3) Evaluate $3m^2 + 2n$ when $m = -4$, $n = -1$

4) Calculate a) mean (to 1 d.p.)

b) median

c) mode

d) range

for

7, 8, 6, 5, 6, 7, 6

5) Calculate $12\frac{1}{2}\%$ of $\pounds 56.80$

6) Dog mix comes as a mixture of protein + carbohydrate in the ratio 4:5.

a) How much of each ~~part~~ ingredient would there be in 27 kg of dog mix?

b) Alice's dog needs 6 kg of protein. How much dog mix should she buy?

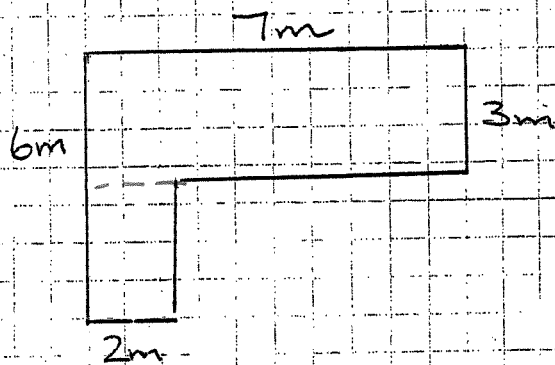
7) Solve $2(x - 4) = 5(x + 2)$

8) An ordinary die is rolled. What is the probability that it ~~lands~~ shows a prime number?

9) Calculate the area of a circle with diameter 15cm.

10) Solve $3(2m - 1) \leq 15$

11) The floor of a room is as shown



a) Calculate the area of carpet needed to cover the floor.

b) If the carpet costs £19.99 a square metre, estimate the cost of the carpet.

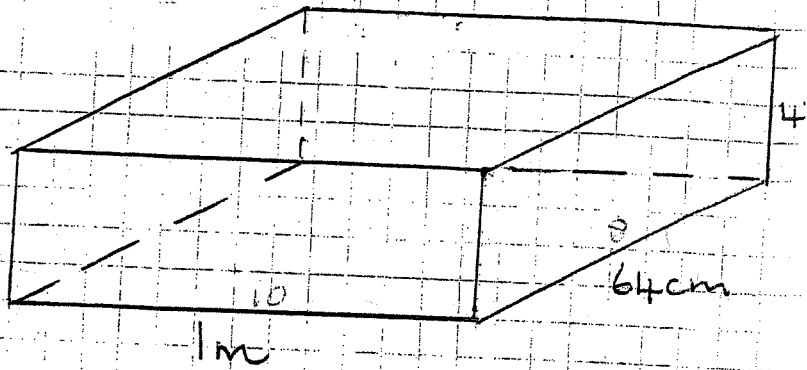
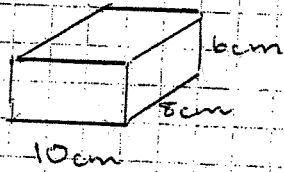
12) Copy and complete these sequences

a) $-5, -3, -1, _, _, _$

b) $1, 4, 9, 16, _, _, _$

c) $_, _, 6, 3, 1.5, 0.75, _$

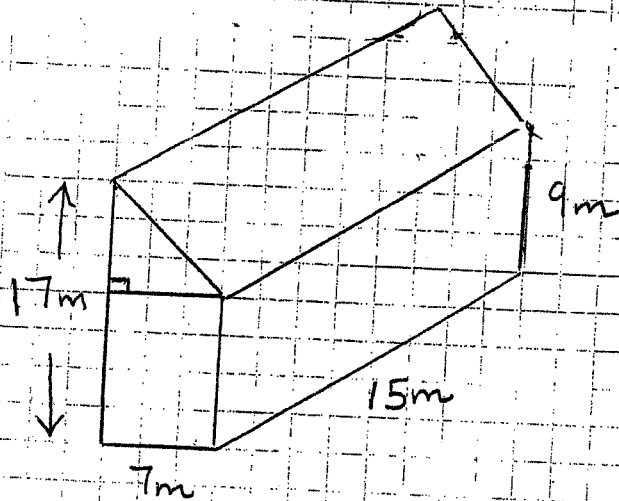
19) The small cuboids shown are packed in a box, as shown.



How many can fit in a box?

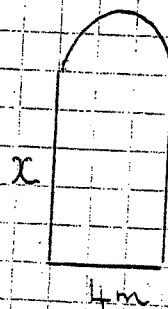
20) Solve $\frac{x+2}{3} - \frac{x-4}{4} = 2$

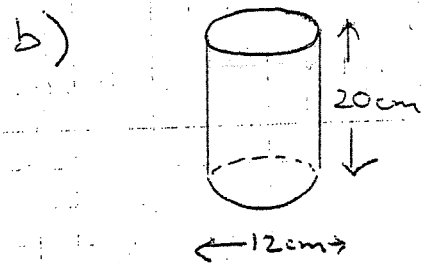
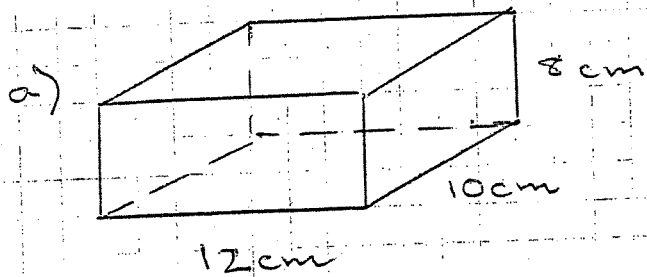
21) Calculate the volume of the barn.



22) The perimeter of the shape below (comprising a rectangle and a semicircle) is 22.28m

Form an equation and solve it to find the length of x . (Use $\pi = 3.14$)

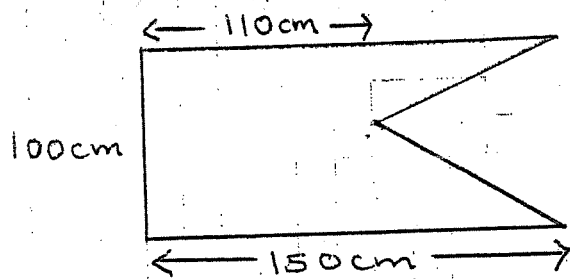




14) Calculate $2\frac{4}{7} \times \frac{7}{9}$

15) Calculate the radius of a circle with circumference 21 cm.
(answer correct to 3 s.f.)

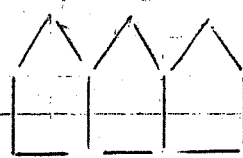
16) Calculate the area of the flag



17) Solve $\frac{2}{3}(y+4) = 10$

18) a) Write down the n^{th} term formula for this sequence
5, 8, 11, 14, ...

b) Calculate, using your formula, the 32nd term in the sequence.

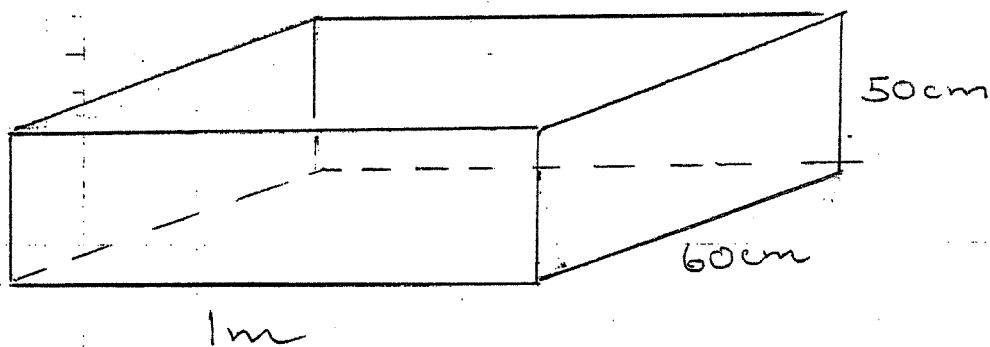


Number of Houses H	1	2	3	4	///	10
Number of matches M	5	9			///	

b) Write down a formula for the number of matches needed to make H houses.

$$M =$$

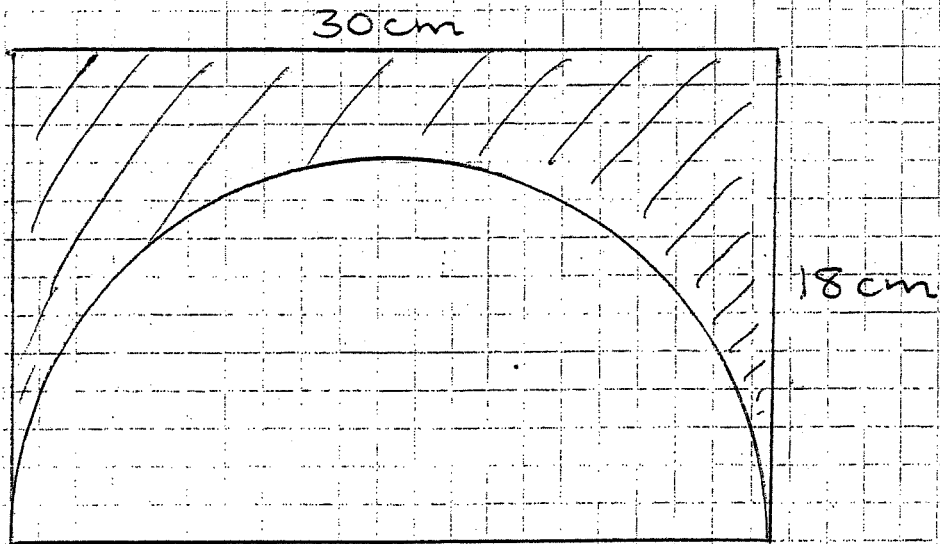
24) An empty fish tank is as shown



a) Calculate the volume of water (in litres) needed to fill ~~in~~ the tank.

b) How many litres will be in the tank if the water is 10cm deep?

Sheet of paper as shown.



Calculate the shaded area.