QT Quick Test 2 - to grade 4
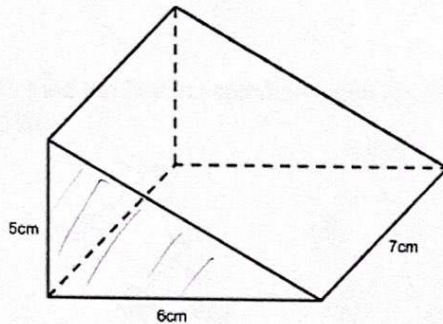
1. Find the total volume of the triangular prism shown.

5cm

7cm

6cm

$$\text{Vol} = \text{Area} \times \text{Depth}$$
$$= \left(\frac{b \times h}{2}\right) \times 7$$
$$= \left(\frac{6 \times 5}{2}\right) \times 7$$
$$= 105 \text{cm}^3$$

2. The first five terms of a sequence are

38   33   28   23   18   13   8   3   -2
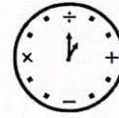
-5 -5 -5 -5 -5 -5 -5 -5

(a) Find the value of the first negative number in the sequence
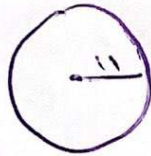(b) Find an expression, in terms of n, for the nth term of the sequence

(a) -2 (b) $-5n + 38 = 38 - 5n$

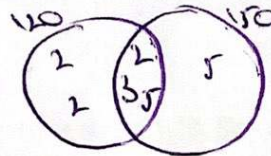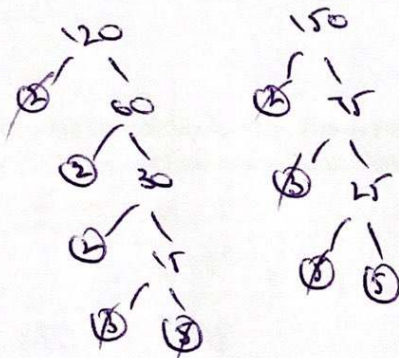3. Work out the size of the exterior angle of an octagon.

$$\frac{360}{8} = 45^\circ$$

4. A circle has a radius of 11cm. Work out the circumference of the circle. Give your answer in terms of π.

$$\text{Circumference} = \pi D$$
$$= 22\pi.$$

5. Find the highest common factor (HCF) and lowest common multiple (LCM) of 120 and 150.

$$HCF = 2 + 3 + 5 = 30$$
$$LCM = 30 \times 2 + 2 + 5 = 600$$

6. Joe measured the height of the flowers in his garden. He added the information to the following chart.
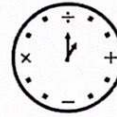(a) Find the class interval that contains the mode
(b) Work out an estimate for the mean height of the flowers in Joe's garden

Height (cm)	Frequency	f×m
120 < h ≤ 140	4	4×130 = 520
140 < h ≤ 160	8	8×150 = 1200
160 < h ≤ 170	10	10×165 = 1650
170 < h ≤ 190	3	3×180 = 540
	25	3910

(a) 160 < h ≤ 170

(b) Mean $= \dfrac{\text{Total}}{\text{Number}} = \dfrac{3910}{25} = 156.4\text{cm}.$

7. Aishu buys a house for £180 000. She sells the house for £192600. Calculate the percentage profit Aishu makes when she sells the house.

$$\frac{Diff}{orig} \times 100 \qquad \frac{192600 - 180000}{180000} = 7\%$$

8. Julie goes on holiday to Italy. The exchange rate is £1 = €1.18. She changes £250 into Euros (€). Work out how many Euros Julie receives.
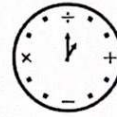
$$\times 250 \left(\begin{array}{ccc} £ & : & € \\ 1 & : & 1.18 \\ 250 & : & 295 \end{array} \right) \times 250 \qquad €295.$$

9. Write down the size of angle x. Give a reason for your answer.
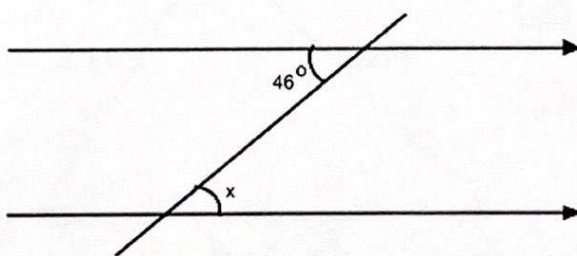
$$x = 46°$$
Alternate angles
are same.

10. Miss Jones wants to buy a calculator for every student in year 10. There are 108 students in year 10. Each calculator costs £11.95. Work out an estimate for the amount of money Miss Jones will spend on calculators.

$100 \times 12 = £1200$

$100 \times 10 = £1000$

11. Work out 125% of 180.

$100\% = 180$

$10\% = 18$

$10\% = 18$

$5\% = \underline{9}$

225

$\underline{\underline{225}}$.

12. The lengths of the sides of a triangle are 2x + 4, 2x + 7 and 2x - 5.
   (a) Write down an expression for the perimeter of the triangle
   (b) The perimeter of the triangle is 36cm. Calculate the value of x.
   (c) Calculate the length of each side of the triangle.

2x + 4   2x - 5

2x + 7
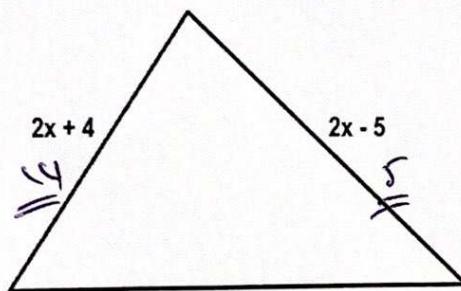
$2x + 4 + 2x - 5 + 2x + 7$

(a) $6x + 6$

(b) $6x + 6 = 36$

$6x = 30$

$x = 5$.

$2(5) + 4$
14

$2x - 5$
$2(5) - 5$
5

$2x + 7$
$2(5) + 7$