Day 278 **A Tier 10-a-day**

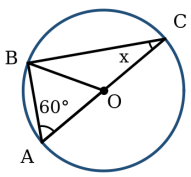
1 $f(x) = 5x - 7$
$g(x) = x^2 + 7$
Find $fg(-3)$

2 Work out $3\frac{4}{9} + 1\frac{1}{2}$
Give your answer as a mixed number in its simplest form.

3 8 painters take 14 days to paint a hall.
All the painters work at the same rate.
How many painters are needed to paint a hall in 7 days?

4 Solve $x^2 = 1$

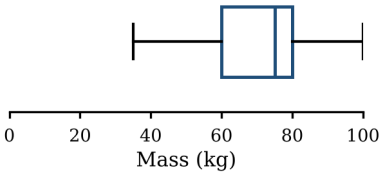
5 A, B and C are points on a circle with centre O.
Angle OAB = 60°.
(a) Work out angle AOB.
(b) Work out the size of angle x.
Give reasons for your answers.



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6 Expand and simplify
$(x - 5)(x + 2)(x + 5)$

7 The box plot shows the masses, in kg, of the parcels in delivery A.
(a) Write down the median and the interquartile range.
For delivery B the median is 80 and the interquartile range is 25.
(b) Compare the distributions of the two deliveries.



8 A metal block has mass 190 g and volume 88 cm^3. The mass is measured to the nearest 10 grams and the volume to the nearest cm^3.
(Calculator)
Work out the upper bound for the density of the metal in g/cm^3.
Give your answer correct to 3 significant figures.

9 A spinner can land on red, blue or green.
P(red) = 0.3 and P(blue) = 0.55.
(a) Work out the probability that it lands on red or blue.
(b) Work out the probability that it lands on green.

10 Describe fully the single transformation that maps shape A onto shape B.

