Day 80 **A Tier 10-a-day**

1 Write the recurring decimal $0.\dot{3}\dot{0}$ as a fraction in its simplest form.

2 Triangle PQR: angle P = 40°, angle Q = 60°, PQ = 4 cm.
Triangle STU: angle S = 40°, angle T = 60°, ST = 8 cm.
Are the two triangles congruent?
Give a reason for your answer.

3 The table shows information about 84 people.
One person is chosen at random.
(a) Find the probability that the person is a child and chose coffee.
(b) The person chose tea. Find the probability that they are an adult.

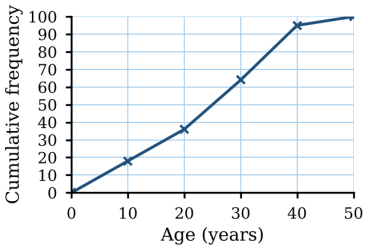
	Tea	Coffee	Total
Adults	27	29	56
Children	21	7	28
Total	48	36	84

4 Solve $\frac{3x - 3}{2} = \frac{3x - 3}{5}$

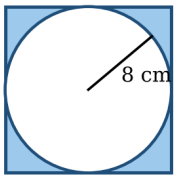
5 Work out $3\frac{1}{6} - 2\frac{1}{4}$
Give your answer as a mixed number in its simplest form.

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6 The cumulative frequency graph shows information about the age of 100 visitors.
Use the graph to find an estimate for
(a) the median,
(b) the number of visitors with a age greater than 20 years.



7 A circle of radius 8 cm fits exactly inside a square.
The circle touches all four sides of the square.
(Calculator)
Work out the area of the shaded region.
Give your answer to 3 significant figures.



8 A tank is in the shape of a cuboid measuring 50 cm by 60 cm by 100 cm.
It already contains 100 litres of water.
Water flows in at 25 litres per minute until the tank is full.
Work out how long this takes. Give your answer in minutes.

9 Solve $\frac{6}{(x+3)} + \frac{4}{(x-4)} = 1$

10 An isosceles triangle has two equal sides of length $(5x - 1)$ cm and $(4x + 2)$ cm.
The third side is 13 cm.
Work out the perimeter of the triangle.