Day 202	A Tier 10-a-day
1 Expand and simplify $(x - 4)^2 - (x - 5)(x - 5)$	
2 A ship leaves a port and travels 30 km on a bearing of 165°. (Calculator) It then travels 16 km on a bearing of 075°. (a) Work out how far it is now from the port. (b) Work out the bearing of its final position from the port. Give your answer to the nearest degree.	
3 Simplify fully $\frac{x^2 + x - 12}{x^2 + 6x + 8}$	
4 Work out $2\frac{1}{2} + 3\frac{1}{3}$ Give your answer as a mixed number in its simplest form.	
5 5 muffins and 3 coffees cost £47. 2 muffins and 2 coffees cost £26. Work out the cost of one coffee.	

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6 The table shows the probabilities of the outcomes of a biased spinner.
(a) Work out the value of p.
(b) The spinner is spun 300 times. Estimate the number of times it lands on 2.

Score	1	2	3	4
Probability	0.05	p	p	0.25

7 Show that $\frac{\sqrt{125}+\sqrt{180}}{\sqrt{5}}$ is an integer, and find its value.

8 A circle has a radius of 10 cm, correct to the nearest cm. (Calculator)
Work out the lower bound for the area of the circle.
Give your answer to 3 significant figures.

9 y is inversely proportional to x.
When x = 5, y = 10.
(a) Find a formula for y in terms of x.
(b) Work out the positive value of x when y = 25.

10 y = 1.04 has been truncated to 2 decimal places.
Write down the error interval for y.