Day 321	A Tier 10-a-day
1 A flagpole stands on horizontal ground. (Calculator) From a point 50 m from the base of the flagpole, the angle of elevation of the top is 41°. Work out the height of the flagpole. Give your answer to 3 significant figures.	
2 Solve $3(x - 2) = 6(x + 1) - 3$	
3 A shop sells rice in 2 different sizes. Small bag: 250 g for £1.65 Large bag: 400 g for £2.50 Which bag is the best value for money? You must show your working.	
4 A rectangle has length $(4x + 4)$ cm and width $(4x + 4)$ cm. The perimeter of the rectangle is 112 cm. (a) Work out the value of x. (b) Work out the length of the rectangle.	
5 Change 16000 cm^2 to m^2.	

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6 A straight line has equation $4x - 3y = 12$ (a) Find the gradient of the line. (b) Find the coordinates of the point where the line crosses the x-axis.	
7 Noah and Isla each invest £2000 for 2 years. (Calculator) Noah's account pays 4% simple interest per year. Isla's account pays 4% compound interest per year. Work out how much more interest Isla earns than Noah.	
8 Show that $\frac{\sqrt{175}+\sqrt{63}}{\sqrt{7}}$ is an integer, and find its value.	
9 A rectangle measures 10 cm by 11 cm, each correct to the nearest cm. (Calculator) Work out the upper bound for the length of a diagonal of the rectangle. Give your answer to 3 significant figures.	
10 A cyclist travels 790 metres in 7 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second. (a) Work out the upper bound and the lower bound of the speed in m/s. (b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.	