Test 11

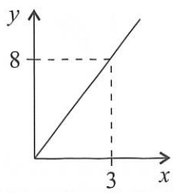
There are **7 questions** in this test. Give yourself **10 minutes** to answer them all.

1. Circle the correct rearrangement of $(bc)^2 = a$.

$c = \pm\frac{a^2}{b}$ $\quad$ $c = \pm\sqrt{\frac{a}{b}}$ $\quad$ $c = \frac{\pm a}{\sqrt{b}}$ $\quad$ $c = \frac{\pm\sqrt{a}}{b}$

[1]

2. Circle the equation of the graph drawn on the diagram below.



$y = 3x + 8$ $\quad$ $y = 8x + 3$ $\quad$ $y = \frac{3}{8}x$ $\quad$ $y = \frac{8}{3}x$

[1]

3. Solve $\frac{5x}{12} = 30$.

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[1]

4. Fully factorise $4g^2 - 9$.

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[2]

5. The first three terms of an arithmetic sequence are 15, 21 and 27. Find the 500th term in the sequence.

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[2]

6. Write $\frac{4}{2+\sqrt{6}}$ in the form $x + y\sqrt{6}$, where x and y are integers. You must show your working.

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[2]

7. Penny completes a triathlon in 2 hours and 16 minutes.

Rodrick takes 31 minutes to complete the swimming segment, 1 hour and p minutes to complete the cycling segment and $4p$ minutes to complete the running segment.

The total time he takes to complete the triathlon is no less than the time it takes Penny.

Form and solve an inequality to find the lowest possible value of p.

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[3]

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