

# QT Quick Test - Grade 5B

Non calculator



1. In a sale, normal prices are reduced by 25%. The normal price of a coat is reduced by £30. Work out the normal price of the coat.

2. Expand and simplify  $(5a - 1)(2a - 8)$

3. Simon drove from Leeds to London. It took him  $4\frac{1}{2}$  hours at a speed of 70mph. Josh drove from Leeds to London. It took Josh 6 hours to make the same journey.

Assuming that Josh drove along the same roads as Simon, and did not take a break:

- (a) Work out Josh's average speed from Leeds to London
- (b) If Josh did not drive along the same roads as Simon, explain how this would affect your answer to part (a)

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4. (a) Work out  $6.24 \times 0.008$

(b) Work out the value of  $(9.4 \times 10^4) \times (1.8 \times 10^3)$ . Give your answer in standard form.

(c) Work out the value of  $(4.5 \times 10^7) \div (1.5 \times 10^{-3})$ . Give your answer in standard form.

5. In a theatre production, the ratio of the number of men to the number of women is 3 : 7.

40% of the men are under the age of 32

50% of the women are under the age of 32

What percentage of all the people in the theatre production are under the age of 32?

6. (a) Factorise  $(x^2 + 13x + 30)$

(b) Hence, or otherwise, find the solutions to  $x^2 + 13x + 30 = 0$

(c) Factorise fully  $20x^2 + 4x$

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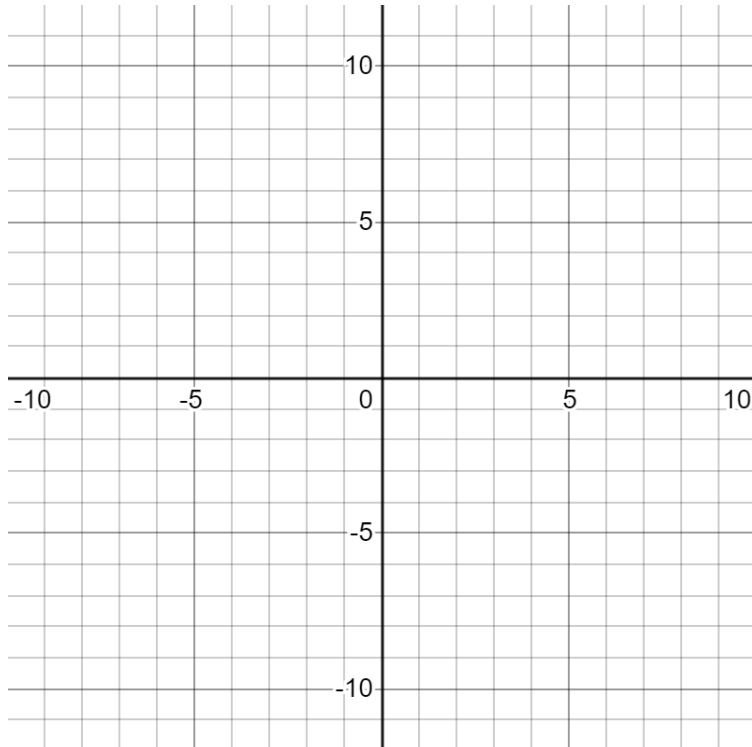
7.  $x$  is inversely proportional to  $y$ .  $x$  is given by the formula  $x = \frac{500}{y}$ .

Find the value of  $y$  when  $x = 12.5$ .

8. (a) Complete the table of values for  $y = x^2 + 2x + 1$

x	-4	-3	-2	-1	0	1	2
y							

(b) On the grid, draw the graph of  $y = x^2 + 2x + 1$



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9. Find the gradient of the line that passes through (-1, -2) and (-3, 10)

10. The diagram shows a cone.

The height of the cone is 15cm. The base of the cone has a diameter of 16cm.

Work out the total surface area of the cone. Give your answer in terms of  $\pi$

