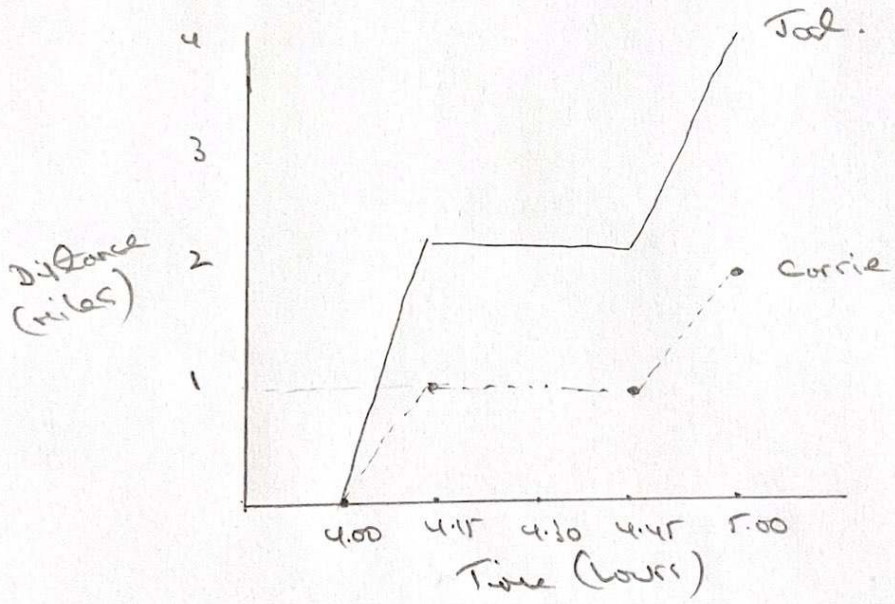
QT Quick Test - Grade 5A

1. Draw your own distance - time graph using the information below. Use the same grid to show both journeys, and clearly label your graph.

Carrie's Journey	Josh's Journey
1. Carrie left school at 4.00pm, to walk home. 2. Carrie lives 2 miles from school. 3. Carrie walks at a speed of 4mph 4. After ¼ of an hour Carrie stops to talk to a friend for 30 minutes. 5. Carrie then walks the rest of the way home.	1. Josh left school at 4.00pm, to cycle home. 2. Josh lives 4 miles from school. 3. Josh cycles at a speed of 8mph 4. After 2 miles, Josh decides to stop at the park 5. Josh stays at the skate park for ½ an hour 6. Josh then cycles the rest of the way



2. Solve $x^2 - 8x + 12 = 0$

12 $(x-6)(x-2)=0$

1 1

-6 -2 $x=6$ $x=2$

3. Material A has a density of 5g/cm³. Material B has a density of 3.1g/cm³. 380g of Material A and 1.24kg of Material B form Material C. Work out the density of Material C. Give your answer correct to 1 decimal place.

(A) Density = $\frac{\text{Mass}}{\text{Vol}}$ (B) Density = $\frac{\text{Mass}}{\text{Volume}}$ (C) Density = $\frac{\text{Mass}}{\text{Volume}}$

$5 = \frac{380}{\text{Vol}}$ $3.1 = \frac{1240}{\text{Vol}}$ $= \frac{380+1240}{76+400}$

Vol = 76cm³ Vol = 400cm³ $= 3.4033$

$= 3.4\text{g/cm}^3$

4. (a) Write 6.5×10^{-4} as an ordinary number

0.00065

Not Calc (b) Work out the value of $(5.4 \times 10^4) \times (2.3 \times 10^3)$. Give your answer in standard form.

54 12.42×10^7

×23 1.242×10^8

162

1080

1242

Not Calc (c) Work out the value of $(3.5 \times 10^7) \div (7 \times 10^2)$. Give your answer in standard form.

$(3.5 \div 7) \times (10^7 \div 10^2)$ $\frac{3.5}{7} = \frac{35}{70} = \frac{1}{2}$

$0.5 \times (10^5)$

5×10^4

5. In a sale, the normal price of a PS4 is reduced by 15%. The sale price of the PS4 is £195.50. Work out the normal price of the PS4.

195.50 = 85% of the normal price

195.50 = 0.85N

÷0.85 ÷0.85

230 = N

£230

6. (a) Expand and simplify (6p - 4)(p - 3)

$6p^2 - 18p - 4p + 12$

$6p^2 - 22p + 12$ → $3p^2 - 11p + 6$

(b) Factorise $x^2 + 4x - 77$

-77

/ \

-7 +11

$(x - 7)(x + 11)$

7. Here is the graph of $y = x^2 + 2x - 3$

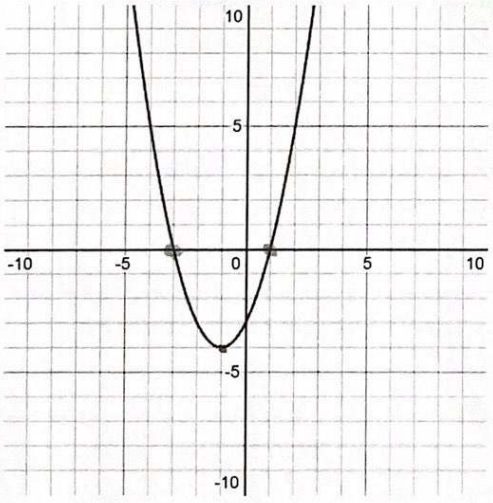
(a) Write down the turning point of the graph $y = x^2 + 2x - 3$ (-1, -4)

(b) Use the graph to find the roots of the equation $x^2 + 2x - 3 = 0$

solutions

solve

$x = 1$ $x = -3$



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

$-3 \times -3 \quad -2 \times -2 \quad -1 \times -1$

x	-3	-2	-1	0	1	2	3
y	11	6	3	2	3	6	11

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