HAA6.1

1) Expand and simplify $(x-3)^3$

2) If $f(x) = 3x^2$ and $g(x) = 3x - 1$ find $fg(x)$

3) Find the equation of the line perpendicular to $3y - x = 6$ passing through the point (2, -7)

4) Find the nth term of the sequence 4, 10, 20, 34, …

5) A car travels 50km in 1 hour 20 minutes, what is its average speed?

HAA6.2

1) m is given as 40 correct to one significant figure.
Write an inequality to show the range of values m could be

2) Shape B is an enlargement of shape A with scale factor 3. If the volume of shape A is 6cm³, what is the volume of shape B?

3) Solve, by factorising, $3x^2 + 16x - 12 = 0$

4) Expand and simplify $\left(4 + \sqrt{3}\right)\left(4 - \sqrt{3}\right)$

5) Sketch the graph of $y = sin\, x$ and $y = cos\, x$

HAA6.3

1) Expand and simplify $(x+3)(x-2)^2$

2) If $f(x) = \frac{4x+3}{2}$ find $f^{-1}(x)$

3) Find the equation of the line perpendicular to $2y = 3x + 8$ passing through the point (6, 1)

4) Find the nth term of the sequence 3, 15, 35, 63, 99, …

5) A car travels 40km in 2 hour 40 minutes, what is its average speed?

HAA6.4

1) p is given as 40 correct to two significant figures.
Write an inequality to show the range of values p could be

2) Shape B is an enlargement of shape A with scale factor 3. If the area of shape A is 6cm², what is the area of shape B?

3) Solve, by factorising, $3x^2 + 13x - 10 = 0$

4) Expand and simplify $(\sqrt{5} + 1)(\sqrt{5} - 1)$

5) Sketch the graph of $y = x^2$ and $y = x^3$

HAA6.5

1) Expand and simplify $(2x^2 - 3x + 4)(5x - 6)$

2) If $f(x) = \frac{4-2x}{5}$ find $f^{-1}(x)$

3) Find the equation of the line **parallel** to $2y = 3x + 8$ passing through the point (6, 1)

4) Find the nth term of the sequence 19, 16, 11, 4, -5, …

5) A car travels 40 km in 25 minutes, what is its average speed in km/h?

HAA6.6

1) t is given as 0.65 correct to two significant figures.
Write an inequality to show the range of values t could be

2) Shape B is an enlargement of shape A with scale factor 5. If the volume of shape A is 2cm³, what is the volume of shape B?

3) Solve, by factorising, $6x^2 + 17x + 12 = 0$

4) Expand and simplify $\left(4 - 2\sqrt{3}\right)\left(4 + 2\sqrt{3}\right)$

5) Sketch the graph of $y = -x^2$ and $y = -x^3$