Higher AA **Autumn Half Term 1 - Week 1:**

1 **Simplify** $\sqrt{80}$

2 £4000 is invested in an account with an interest rate of 3% per annum. Write a formula for the value of the investment v, after t years.

3 $s = \frac{1}{2}(u + v)t$ If u = 5, v = 10 and t = 20, find the value of s

4 **Evaluate** $8^{-\frac{1}{3}}$

5 A block with a volume of 40 cm^3 has a mass of 800g. What is the density of the block

6 Find the **nth term of** 2, 5, 10, 17,….

7 **Sketch the graph** of y = 4x + 2

8 **Find the equation** of the line through point (2,4) with gradient 5

9 **Work out** $6 \times 10^4 + 2.1 \times 10^3$

10 **Express** $x^2 + 6x - 10$ in completed square form

Higher AA **Autumn Half Term 1 - Week 2:**

1	**Simplify** $\sqrt{120}$
2	£2000 is invested in an account with an interest rate of 2.5% per annum. Write a formula for the value of the investment v, after t years.
3	$s = \frac{1}{2}(u + v)t$ If u = 10, v = 30 and s = 160, find the value of t
4	**Evaluate** $16^{\frac{3}{2}}$
5	A block with a volume of 120 cm^3 has a mass of 60g. What is the density of the block?
6	Find the **nth term of** 2, 6, 12, 20,….
7	**Sketch the graph** of $y = x^3$
8	**Find the equation** of the line through point (-1,3) with gradient 4
9	**Work out** $1.5 \times 10^3 + 9.8 \times 10^3$
10	**Express** $x^2 - 6x + 12$ in completed square form

Higher AA **Autumn Half Term 1 – Week 3:**

1	**Simplify** $\sqrt{250}$
2	A car bought for £6000 depreciates in value by 6% each year. Write a formula for the value of the car v, after t years.
3	$s = \frac{1}{2}(u + v)t$ If u = 15, v = 7 and t = 40, find the value of s
4	**Evaluate** $125^{-\frac{2}{3}}$
5	A block with a volume of 800 cm^3 has a mass of 0.08 kg. What is the density of the block?
6	Find the **nth term of** 3, 8, 15, 24….
7	**Sketch the graph** of y = cos x
8	**Find the equation** of the line through point (4,22) with gradient 6
9	**Work out** $6.2 \times 10^3 - 1.94 \times 10^2$
10	**Express** $x^2 - 6x - 2$ in completed square form

Higher AA **Autumn Half Term 1 - Week 4:**

1	**Simplify** $\sqrt{150}$
2	A particle of mass 0.5g decreases in mass by 7.5% each month. Write a formula for the mass of the particle m, after t months.
3	$s = \frac{1}{2}(u + v)t$ If s = 50, v = 3 and t = 10, find the value of u
4	**Evaluate** $64^{\frac{1}{6}}$
5	A block with density 0.2 g/cm^3 has a volume of 400 cm^3. What is the mass of the block?
6	Find the **nth term of** -2, -2, 0, 4
7	**Sketch the graph** of $y = \frac{1}{x}$
8	**Find the equation** of the line through point (2,5) with gradient 0.5
9	**Work out** $8.4 \times 10^4 - 9.4 \times 10^3$
10	**Express** $x^2 + 10x - 3$ in completed square form

Higher AA **Autumn Half Term 1 – Week 5:**

1	**Simplify** $\sqrt{140}$
2	A particle of mass 0.5g increases in mass by 2.5% each month. Write a formula for the mass of the particle m, after t months.
3	$s = \frac{1}{2}(u + v)t$ If s = 40, u = 5 and v = 11, find the value of t
4	**Evaluate** $32^{\frac{4}{5}}$
5	A block with mass 1.2 kg has a density of 6 g/cm^3. What is the volume of the block
6	Find the **nth term of** 3, 12, 27, 48
7	**Sketch the graph** of $y = -x^2$
8	**Find the equation** of the line through point (3,1) with gradient -3
9	**Work out** $6.25 \times 10^3 + 1.9 \times 10^4$
10	**Express** $x^2 - 8x + 15$ in completed square form

Higher AA **Autumn Half Term 1 – Week 6:**

1 **Simplify** $\sqrt{320}$

2 £1000 is invested with an interest rate of 0.1% per annum. Write a formula for the value of the particle v, after t years.

3 $s = \frac{1}{2}(u + v)t$ If s = 120, u = 15 and t = 6, find the value of v

4 **Evaluate** $216^{-\frac{2}{3}}$

5 A block with mass 1.2 kg has a volume of 6 cm^3. What is the density of the block?

6 Find the **nth term of** 3, 10, 21, 36

7 **Sketch the graph** of $y = x^3$

8 **Find the equation** of the line through point (3,4) with gradient 4

9 **Work out** $5.55 \times 10^5 + 9.5 \times 10^4$

10 **Express** $x^2 - 6x + 10$ in completed square form