

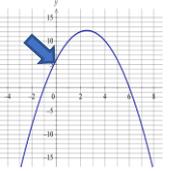
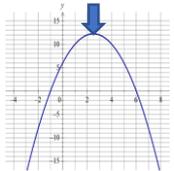
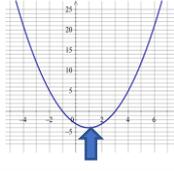
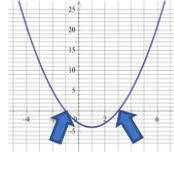
Unit 6 – KS3 Algebra Review

No.	Question	Answer
6.1	What is a variable?	A letter used to represent an unknown number e.g. x
6.2	What is a term?	Each part of an expression e.g. 2x; 4; x ²
6.3	What is the constant?	The number on its own
6.3	What is an expression?	A mixture of numbers and letters e.g. 2x + 5
6.4	What is an equation?	Two expressions equal to one another e.g. 2x + 5 = 10
6.5	What is a coefficient?	The number in front of the variable e.g. 2x (2 is the coefficient of x)
6.6	What does substitute mean?	Replace the variable with a number
6.7	What does solve mean?	Find the variable
6.8	What are like terms?	Terms that have the same letter and same index e.g. 2x ² and 5x ²
6.9	What does simplify mean?	Collect the like terms e.g. 2x ² + 5x ² = 7x ²
6.10	What does the m stand for in y = mx + c?	m = gradient
6.11	How do you calculate the gradient?	$\frac{\text{Difference in } y}{\text{Difference in } x} = \frac{y_2 - y_1}{x_2 - x_1}$
6.12	What does the c stand for in y = mx + c?	c = y intercept (where the line crosses y axis)
6.13	How do you find the mid-point?	$(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$
6.14	What do parallel lines have?	Have the same gradient
6.15	What do perpendicular lines have?	Gradient = $-\frac{1}{\text{gradient}}$

Unit 7 – quadratics

No.	Question	Answer
7.1	What is the form of a quadratic equation?	ax ² +bx + c = 0
7.2	What is the difference of two squares or D.O.T.S	Expressions that are in the form a ² – b ² which can be factorised to give (a + b)(a – b)

Unit 8 – quadratic graphs

No.	Question	Answer	Example
8.1	What is the y intercept?	Where the graph crosses the y axis	
8.2	What is the maximum point?	The point of the graph where the gradient = 0 and changes from positive to negative	
8.3	What is the minimum point?	The point of the graph where the gradient = 0 and changes from negative to positive	
8.4	What are the roots?	Where the graph crosses or touches the x axis (the solutions)	

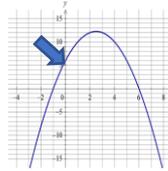
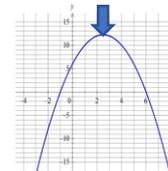
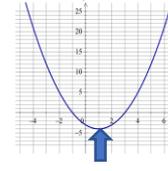
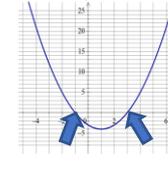
Unit 9 – simultaneous equations

9.1	Simultaneous equations	Are equations where the unknowns hold the same value. The equations are solved at the same time.
9.2	The three ways of solving simultaneous equations are	1) The elimination method 2) By substitution 3) Graphically

Unit 6 - quadratics		
No.	Question	Answer
6.1	What is the form of a quadratic equation?	$ax^2+bx + c = 0$
6.2	What is the difference of two squares or D.O.T.S	Expressions that are in the form $a^2 - b^2$ which can be factorised to give $(a + b)(a - b)$
6.3	What is the quadratic formula?	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ Where $ax^2+bx + c = 0$
6.4	$x^2 + 2a + b$	$(x + a)^2 - a^2 + b$
6.5	$(x + a)^2 - b$	Completed square form where the turning point is $(-a, +b)$
6.6	Three ways to solve a quadratic equation are	1) Factorise and solve 2) Quadratic formula 3) Complete the square and solve

Revision of graphs

1	What does the m stand for in $y = mx + c$?	$m = \text{gradient}$
2	How do you calculate the gradient?	$\frac{\text{Difference in } y}{\text{Difference in } x} = \frac{y_2 - y_1}{x_2 - x_1}$
3	What does the c stand for in $y = mx + c$?	$c = y \text{ intercept}$ (where the line crosses y axis)
4	How do you find the mid-point?	$(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$
5	What do parallel lines have?	Have the same gradient
6	What do perpendicular lines have?	Gradient = $-\frac{1}{\text{gradient}}$

Unit C7 – quadratic graphs			
No.	Question	Answer	Example
7.1	What is the y intercept?	Where the graph crosses the y axis	
7.2	What is the maximum point?	The point of the graph where the gradient = 0 and changes from positive to negative	
7.3	What is the minimum point?	The point of the graph where the gradient = 0 and changes from negative to positive	
7.4	What are the roots?	Where the graph crosses the x axis (the solutions)	

Unit 8 – algebraic fractions

8.1	Multiplying algebraic fractions	$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$
8.2	Dividing algebraic fractions	$\frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$
8.3	When simplifying algebraic fractions	Always factorise and then cancel
8.4	To add algebraic fractions	You need a common denominator

Unit 9 – simultaneous equations

9.1	Simultaneous equations	Are equations where the unknowns hold the same value. The equations are solved at the same time.
9.2	The three ways of solving simultaneous equations are	1) The elimination method 2) By substitution 3) Graphically