Drill Questions



Sketching Quadratics Pack 1

Drill Questions: Sketching Quadratics Pack 1

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Quadratic Equation	$y = x^2 + 2x + 1$
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

Quadratic Equation	y =
Factorised form	y = (x+1)(x+3)
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 3)^2 - 4$

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	$y = x^2 + x - 2$
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	$y = x^2 + 2x - 8$
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	$y = 6 - 5x - x^2$
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 1.5)^2 - 0.25$

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =(x-1)(x+3)
Completed Square form	y =

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =(2 - x)(1+x)
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Pack 1

Quadratic Equation	
Factorised form	y = (x+1)(x+7)
Completed Square form	

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 4.5)^2 - 0.25$

ShapeRootsY -interceptTurning PointAxis of symmetry

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Pack 1

Quadratic Equation	y =
Factorised form	y =(x-2)(x+2)
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Pack 1

Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 0)^2 + 4$

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 6)^2 - 4$

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

Image: Solution of the state of the sta

Quadratic Equation	y =
Factorised form	y =
Completed Square form	$y = (x + 3)^2 - 1$

Pack 1

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	u
Roots	x = -4 and x = -2
Y -intercept	(0, 63)
Turning Point	(-8, -1)
Axis of symmetry	x = -8

Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	u
Roots	x = -5 and x = -1
Y -intercept	(0, 5)
Turning Point	(-3 ,-4)
Axis of symmetry	x = -3

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	u
Roots	x = -2 and x = -6
Y -intercept	(0, 12)
Turning Point	(-4 ,-4)
Axis of symmetry	x = - 4



Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	n						
Roots	x = -1 and x = -4						
Y -intercept	(0, -12)						
Turning Point	(-4 ,4)						
Axis of symmetry	x = - 4						

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Pack 1

Shape	n
Roots	x = -1 and x = -4
Y -intercept	(0, -4)
Turning Point	(-2.5 ,2.25)
Axis of symmetry	x = -2.5





Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	





Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

Pack 1

Question 22

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Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	

Pack 1

Pack 1



Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	



Pack 1



Quadratic Equation	y =
Factorised form	y =
Completed Square form	y =

Shape	
Roots	
Y -intercept	
Turning Point	
Axis of symmetry	



Quadratic Equation	$y = x^2 + 2x + 1$
Factorised form	y = (x+1)(x+1)
Completed Square form	$y = (x + 1)^2$

Pack 1	
Question	1

Shape	u
Roots	x = -1 repeated
Y -intercept	(0,1)
Turning Point	(-1,0)
Axis of symmetry	x = -1





Quadratic Equation	$y = x^2 + 4x + 3$
Factorised form	y = (x+1)(x+3)
Completed Square form	$y = (x + 2)^2 - 1$

Pack 1	
Question	2

Shape	u
Roots	x = -1 and x = - 3
Y -intercept	(0,3)
Turning Point	(-2 ,-1)
Axis of symmetry	x = -2



Solutions

Quadratic Equation	$y = x^2 + 6x + 5$
Factorised form	y = (x+1)(x+5)
Completed Square form	$y = (x + 3)^2 - 4$

Pack 1	
Question	3

Shape	u
Roots	x = -1 and x = - 5
Y -intercept	(0,5)
Turning Point	(-3 ,-4)
Axis of symmetry	x = -3





$y = x^2 + x - 2$
y = (x-1)(x+2)
$y = (x + 1/2)^2 - 2\frac{1}{4}$ y = (x + 0.5)^2 - 2.25

Pack 1	
Question	4

Shape	u
Roots	x = 1 and x = - 2
Y -intercept	(0,-2)
Turning Point	(0.5 ,-2.25)
Axis of symmetry	x = 0.5



Solutions Pack 1

Question 5

Quadratic Equation	$y = x^2 + 2x - 8$
Factorised form	y = (x-2)(x+4)
Completed Square form	$y = (x + 1)^2 - 9$

Shape	u
Roots	x = 2 and x = - 4
Y -intercept	(0, -8)
Turning Point	(-1, -9)
Axis of symmetry	x = -1





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Quadratic Equation	$y = 6 - 5x - x^2$
Factorised form	y =(1 - x)(6+x)
Completed Square form	$y = -(x + 5/2)^2 + 12 \frac{1}{4}$
	$y = -(x + 2.5)^2 + 12.25$

Shape	n
Roots	x =1 and x = - 6
Y -intercept	(0, 6)
Turning Point	(-2.5, -12.25)
Axis of symmetry	x = -2.5



Solutions Pack 1

Question 7

Quadratic Equation	$y = x^2 + 3x + 2$
Factorised form	y = (x+2)(x+1)
Completed Square form	$y = (x + 1.5)^2 - 0.25$

Shape	u	
Roots	x = -2 and x = - 1	
Y -intercept	(0, 2)	
Turning Point	(-1.5, -0.25)	
Axis of symmetry	x = -1.5	





Pack 1

Question 8

Quadratic Equation	$y = x^2 + 2x - 3$
Factorised form	y =(x-1)(x+3)
Completed Square form	$y = (x+1)^2 - 4$

+1) ² - 4	

Shape	u	
Roots	x = 1 and x = - 3	
Y -intercept	(0, -3)	
Turning Point	(-1, - 4)	
Axis of symmetry	x = -1	





Quadratic Equation	$y = -x^2 + x + 2$
Factorised form	y =(2 - x)(1+x)
Completed Square form	y = - $(x-1/2) + 2\frac{1}{4}$ y = - $(x-0.5) + 2.25$

Shape	n	
Roots	x = 2 and x = - 1	
Y -intercept	(0, -3)	
Turning Point	(-1, - 4)	
Axis of symmetry	x = -1	





Quadratic Equation	$y = x^2 + 8x + 7$
Factorised form	y = (x+1)(x+7)
Completed Square form	$y = (x + 4)^2 - 9$

Pack 1	
Question	10

Shape	u	
Roots	x = -1 and x = -7	
Y -intercept	(0, 7)	
Turning Point	(-4, - 9)	
Axis of symmetry	x = -4	





Quadratic Equation	$y = x^2 + 9x + 20$
Factorised form	y =(x+4)(x+5)
Completed Square form	$y = (x + 4.5)^2 - 0.25$

Shape	u	
Roots	x = -1 and x = - 7	
Y -intercept	(0, 7)	
Turning Point	(-4.5, - 0.25)	
Axis of symmetry	x = -4.5	



	Solutions	
_		
	Pack 1	
	Question 12	

Quadratic Equation	$y = x^2 - 4$
Factorised form	y =(x-2)(x+2)
Completed Square form	$y = (x + 0)^2 - 4$

Shape	u
Roots	x = 2 and x = -2
Y -intercept	(0, -4)
Turning Point	(0, -4)
Axis of symmetry	x = 0



Solutions

Quadratic Equation	$y = x^2 + 4$
Factorised form	Does not factorise
Completed Square form	$y = (x + 0)^2 + 4$

Shape	u
Roots	No real roots
Y -intercept	(0, 4)
Turning Point	(0, 4)
Axis of symmetry	x = 0



Pack 1 Question 13

Solutions	
Pack 1	
Question 14	

Quadratic Equation	$y = x^2 + 12x + 32$
Factorised form	y = (x+4)(x+8)
Completed Square form	$y = (x + 6)^2 - 4$

Shape	u	
Roots	x = -4 and x = -8	
Y -intercept	(0, 32)	
Turning Point	(-6, -4)	
Axis of symmetry	x = -6	





Quadratic Equation	$y = x^2 + 6x + 8$
Factorised form	y =(x+4)(x+2)
Completed Square form	$y = (x + 3)^2 - 1$

Shape	u
Roots	x = -4 and x = -2
Y -intercept	(0, 8)
Turning Point	(-3, -1)
Axis of symmetry	x = -3



Solutions Pack 1

Quadratic Equation	$y = x^2 + 16x + 63$
Factorised form	y =(x+7)(x+9)
Completed Square form	$y = (x + 8)^2 - 1$

	Question 16

Shape	u
Roots	x = -4 and x = -2
Y -intercept	(0, 63)
Turning Point	(-8, -1)
Axis of symmetry	x = -8



	Solutions
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	Pack 1

Question 17

Quadratic Equation	$y = x^2 + 6x + 5$
Factorised form	y =(x+1)(x+5)
Completed Square form	$y = (x + 3)^2 - 4$

Shape	u
Roots	x = -5 and x = -1
Y -intercept	(0, 5)
Turning Point	(-3 ,-4)
Axis of symmetry	x = -3





Quadratic Equation	$y = x^2 + 8x + 12$
Factorised form	y =(x+2)(x+6)
Completed Square form	$y = (x + 4)^2 - 4$

Pack 1	
Question	18

Shape	u
Roots	x = -2 and x = -6
Y -intercept	(0, 12)
Turning Point	(-4 ,-4)
Axis of symmetry	x = - 4





Quadratic Equation	y = -x ² - 8x - 12
Factorised form	y = -(x+2)(x+6)
Completed Square form	$y = -(x + 4)^2 + 4$

Shape	n
Roots	x = -2 and $x = -6$
Y -intercept	(0, -12)
Turning Point	(-4 ,4)
Axis of symmetry	x = - 4





Quadratic Equation	$y = -x^2 - 5x - 4$
Factorised form	y = -(x+4)(x+1)
Completed Square form	$y = -(x + 2.5)^2 + 2.25$

Shape	n
Roots	x = -1 and x = -4
Y -intercept	(0, -4)
Turning Point	(-2.5 ,2.25)
Axis of symmetry	x = -2.5



Pack 1 Question 20



Quadratic Equation	$y = x^2 + 17x + 70$
Factorised form	y =(x+7)(x+10)
Completed Square form	y = (x + 8.5) - 2.25

Shape	u
Roots	x = -7 and x = -10
Y -intercept	(0,70)
Turning Point	(-8.5,-2.25)
Axis of symmetry	x = -8.5



Quadratic Equation	$y = x^2 + 9x + 8$
Factorised form	y =(x+1)(x+8)
Completed Square form	$y = (x + 4.5)^2 - 12.25$

Shape	u
Roots	x = -1 and x = - 8
Y -intercept	(0,8)
Turning Point	(-4.5, -12.25)
Axis of symmetry	x = -4.5

Pack 1



Quadratic Equation	$y = -x^2 - 5x - 6$
Factorised form	y = -(x+2)(x+3)
Completed Square form	$y = -(x + 2.5)^2 + 0.25$

Shape	n
Roots	x = -2 and x = - 3
Y -intercept	(0,-6)
Turning Point	(-2.5,0.25)
Axis of symmetry	x = -2.5

Pack 1

Pack 1



Quadratic Equation	$y = x^2 + 3 x - 28$
Factorised form	y =(x-4)(x+7)
Completed Square form	$y = (x + 1.5)^2 - 30.25$

Shape	u
Roots	x = 4 and x = - 7
Y -intercept	(0, -28)
Turning Point	(-1.5, -30.25)
Axis of symmetry	x = -1.5



Pack 1



Quadratic Equation	$y = x^2 - 4x - 45$
Factorised form	y = (x-9)(x+5)
Completed Square form	$y = (x - 2)^2 - 49$

Shape	u
Roots	x = -5 and x = 9
Y -intercept	(0, -45)
Turning Point	(2, - 49)
Axis of symmetry	x = 2

Books by the Author

The **Pooch Puzzles** series is a collection of printed crosswords, sudokus, word searches and other puzzles – some educational, some just for fun.

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