**Score: *out of 25***

**Homework: Quadratic Equations**

**Name:**

**Literacy**

*The latin word for ‘****square’*** *is ‘****quadratus’****. Quadratic equations are named as such because the largest power in them is a* ***square****.*

**Research**

Write an example of an equation that could be solved using the **difference of two squares**, and give the two solutions.

**Stretch:**

1. Use any method to solve [4 marks]
	* 1. $x^{2}-9=0$
		2. $x^{2}-64=0 $
		3. $x^{2}-1=0$
		4. $4x^{2}-25=0$
2. Use your preferred method to solve [3 marks]
	* 1. $2x^{2}+5x+3=0$
		2. $3x^{2}-x-2=0$
		3. $2x^{2}-7x+3=0$

**Skills Check**

1. Factorise and solve [3 marks]
	1. $x^{2}+4x+3$ = 0
	2. $x^{2}+9x+20=0 $
	3. $x^{2}+17x+72=0$
2. Factorise and solve [3 marks]
	1. $x^{2}-15x+36=0$
	2. $x^{2}-25x+100=0$
	3. $x^{2}-11x+24=0$
3. Factorise and solve [3 marks]
	1. $x^{2}-x-12=0$
	2. $x^{2}+2x-63=0$
	3. $x^{2}+15x-100=0$
4. Factorise and solve [3 marks]
	1. $x^{2}-5x=36$
	2. $x^{2}+6x=16$
	3. $2x=15-x^{2}$
5. Use the quadratic formula to solve (2d.p.) [6 marks]
	1. $x^{2}+6x-24=0$
	2. $x^{2}+5x=5$
	3. $x^{2}=3x+3$
	4. $3x^{2}+7x-13=0$
	5. $4x^{2}+8x-1=0$
	6. $6x^{2}+17x=40$

**Memory**

The quadratic formula is

$$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

You need to know this for your exam- could you create a flash card to help remember it?

**Score: *out of 25***

**Homework: Quadratic Equations**

**ANSWERS**

**Literacy**

*The latin word for ‘****square’*** *is ‘****quadratus’****. Quadratic equations are named as such because the largest power in them is a* ***square****.*

**Research**

Write an example of an equation that could be solved using the **difference of two squares**, and give the two solutions.

Any equation in the form $x^{2}-[square number]$

**Stretch:**

1. Use any method to solve [5 marks]
	* 1. $x^{2}-9=0$ x = 3 , -3
		2. $x^{2}-64=0 $x = 8, -8
		3. $x^{2}-1=0$ x = 1, -1
		4. $4x^{2}-25=0$ x = -2/3 , 2/3
2. Use your preferred method to solve [3 marks]
	* 1. $2x^{2}+5x+3=0$ x = -1.5, -1
		2. $3x^{2}-x-2=0$ x =-1.5 , -1
		3. $2x^{2}-7x+3=0$ x = 0.5, 3

**Skills Check**

1. Factorise and solve [3 marks]
	1. $x^{2}+4x+3$ = 0 x= -1, -3
	2. $x^{2}+9x+20=0 $ x= -4, -5
	3. $x^{2}+17x+72=0$ x = -9, -8
2. Factorise and solve [3 marks]
	1. $x^{2}-15x+36=0$ x = 3, 12
	2. $x^{2}-25x+100=0$ x = 5 , 20
	3. $x^{2}-11x+24=0$ x = 3 , 8
3. Factorise and solve [3 marks]
	1. $x^{2}-x-12=0$ x = -3, 4
	2. $x^{2}+2x-63=0$ x = -9, 7
	3. $x^{2}+15x-100=0$ x = -20, 5
4. Factorise and solve [3 marks]
	1. $x^{2}-5x=36$ x = -4 , 9
	2. $x^{2}+6x=16$ x = -8, 2
	3. $2x=15-x^{2}$ x = -5, 3
5. Use the quadratic formula to solve (2d.p.) [6 marks]
	1. $x^{2}+6x-24=0$ x = -8.74 , 2.74
	2. $x^{2}+5x=5$ x = -5.85, 0.85
	3. $x^{2}=3x+3$ x = -0.79 , 3.79
	4. $3x^{2}+7x-13=0$ x = -3.55 , 1.22
	5. $4x^{2}+8x-1=0$ x = -2.12 , 0.12
	6. $6x^{2}+17x=40$ x = -4.36, 1.53

**Memory**

The quadratic formula is

$$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

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