

METHODS USED IN SOLVING QUADRATIC EQUATION

There are basically three methods for solving quadratic equations. They are :

- Factoring
- The quadratic formula (almighty formula)
- Completing the square

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$$X = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(-14)}}{2}$$

$$X = \frac{-5 \pm \sqrt{25 + 56}}{2}$$

$$X = \frac{-5 \pm \sqrt{81}}{2}$$

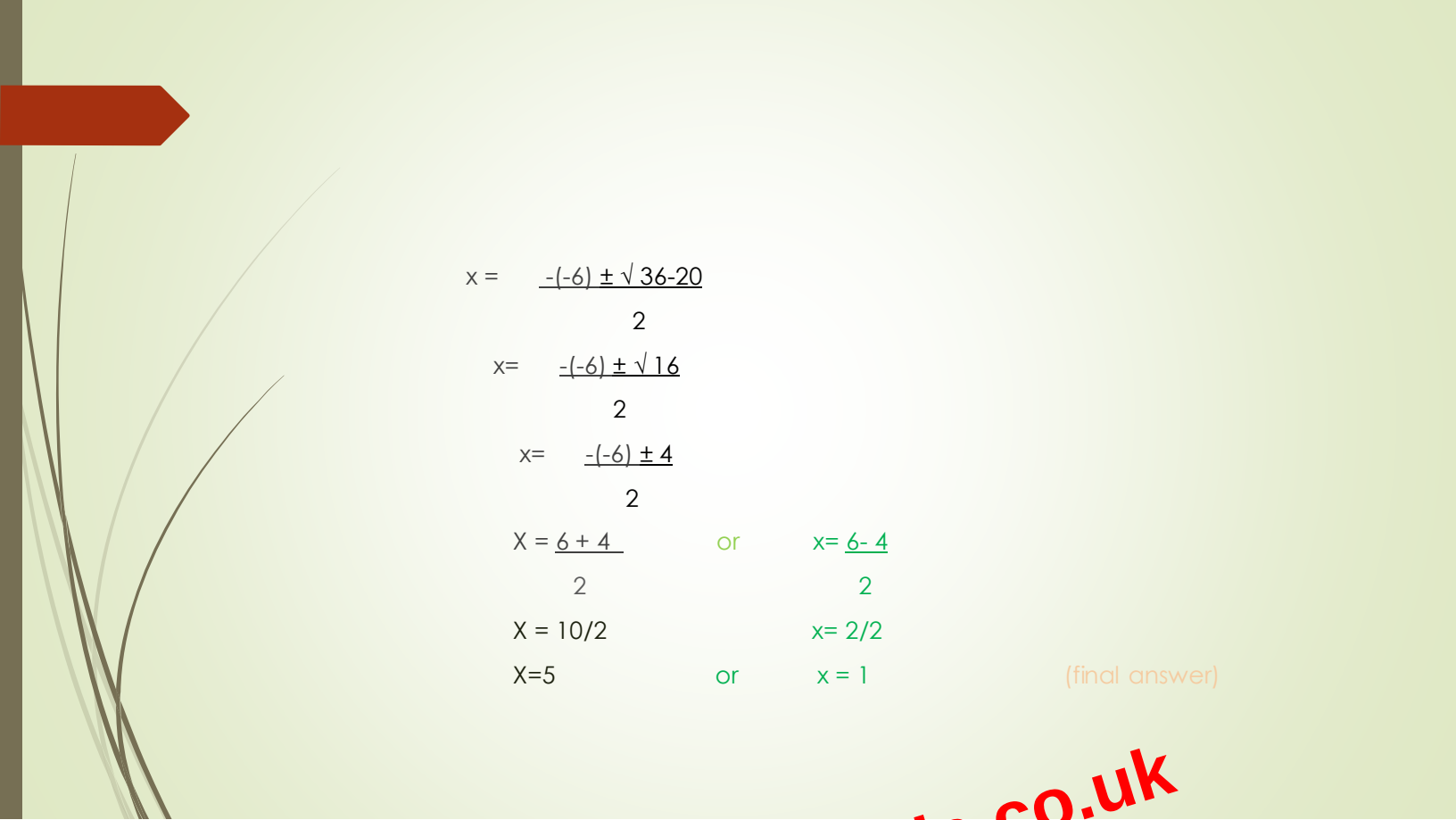
$$x = \frac{-5+9}{2} = 4/2 = 2 ,$$

$$x = 2$$

$$x = \frac{-5-9}{2} = -14/2 = -7$$

$$0 x = -7 \quad (\text{final answer})$$

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$$x = \frac{-(-6) \pm \sqrt{36-20}}{2}$$

$$x = \frac{-(-6) \pm \sqrt{16}}{2}$$

$$x = \frac{-(-6) \pm 4}{2}$$

$$X = \frac{6+4}{2} \quad \text{or} \quad x = \frac{6-4}{2}$$

$$X = 10/2 \quad \text{or} \quad x = 2/2$$

$$X=5 \quad \text{or} \quad x=1 \quad \text{(final answer)}$$

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2. Solve $x^2 - 3 = 2x$ using the factoring method

Solution

$$x^2 - 3 = 2x$$

We rearrange this equation

$$x^2 - 2x - 3 = 0$$

$$(x-3)(x+1) = 0$$

$$x-3=0 \quad x+1=0$$

$$x=3, \text{ or } x=-1$$

Then the solution is $x=-1$, or 3

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