Year 8
Weekly Tutorial - 10
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1. Factorize the following quadratic expression.

   a) $x^2 + 3x + 2$ **e)** $x^2 - x - 20$

   b) $x^2 + 8x + 12$ **f)** $x^2 - 5x + 6$

   c) $x^2 + 6x + 9$ **g)** $x^2 - 10x + 24$

   d) $x^2 - 2x - 3$ **h)** $x^2 - 9x + 14$

2. Expand and simplify, $(5x + 1)(3 - x)(1 - x)$

3. Make x the subject, $y = 5\sqrt{\dfrac{2x+3}{x}}$

4. Solve, $\dfrac{3x-11}{2} + x \geq 5$

5. Solve, $\dfrac{x-y}{2} = 6$, $\dfrac{3y+5}{2} = 2x$

6. Solve, $5x - 3 : 2x + 1 = 4 : 1$

7. In a sale, the normal price of a TV is reduced by 20%. The sale price of the TV is £ 600. Work out the normal price of the TV.

8. Mark invests £ 8 000 in a savings account. He gets 2.5% per annum compound interest. After how many years will Mark have more than £ 8 615 in his account?

9. Carlo puts tins into small boxes and into large boxes.

He put 6 tins into small box.
He put 20 tins into large box.

Carlo puts a total of 3000 tins into the boxes so that

number of tins in small boxes : number of tins in large boxes $= 2 : 3$

Carlo says that less than 30% of the boxes filled with tins are large boxes.

Is Carlo correct?
You must show all your working.

(Edexcel - 2021)

10. At the end of 2017

       the value of Tamara's house was £ 220 000
       the value of Rahim's house was £ 160 000

At the end of 2019

       the value of Tamara's house had decreased by 20%.
       the value of Rahim's house had increased by 30%.

At the end of 2019, whose house had the greater value?
You must show how you get your answer.

(Edexcel - 2020)