

## F Summer Intro

- Factorise fully  $2ax^3 - 8ax$ .  $2ax(x-2)(x+2)$
- Factorise fully  $4x^2 + 4x - 15$ .  $(2x+5)(2x-3)$
- Make  $x$  the subject in  $\sqrt{x-3} = a$ .  $x = a^2 + 3$
- Make  $x$  the subject in  $\frac{2x+a}{x-c} = b$ .  $x = \frac{a+bc}{b-2}$
- Solve  $\frac{u+1}{2} - u - \frac{2u-1}{3} = u + 2$ .  $u = -\frac{7}{13}$
- Solve  $(x-1)(x+2) = (x-7)(x+1)$ .  $x = -\frac{5}{7}$
- Solve  $x^2 + 3x = 40$ .  $x = -8$  or  $x = 5$
- Solve  $3x^2 = 24 + x$ .  $x = 3$  or  $x = -\frac{8}{3}$
- Solve  $\frac{x+3}{-7} > -4$ .  $x < 25$
- Find the gradient of the line  $3x - 7y = 9$ .  $m = \frac{3}{7}$
- Find the equation of the line with gradient  $\frac{2}{3}$  through the point  $(6, 1)$  in the form  $y = mx + c$ .  $y = \frac{2}{3}x - 3$
- Find the equation of the line through  $(-1, 0)$  and  $(1, 1)$ . Give your final answer in the form  $ax + by + c = 0$  where  $a, b$  and  $c$  are integers.  $x - 2y + 1 = 0$
- The triangle  $ABC$ , there is a right angle at  $B$ . If  $AC = 7$  and  $BC = 4$ . Find angle  $CAB$ .  $34.8$  (3sf)
- The triangle  $ABC$ , there is a right angle at  $B$ . If  $AB = 11$  and  $CAB = 27^\circ$ . Find  $AC$ .  $12.3$  (3sf)
- Find the 1000th term of the following sequence: 56, 62, 68, 74, 80, ...  $6050$
- Solve the simultaneous equations 
$$\begin{aligned} 2x - y &= 3 \\ 3x - 2y &= 1 \end{aligned}$$
  $(x, y) = (5, 7)$