

Factor completely.

Turn this into an equation. Multiply both sides by 12 to clear the denominators. Factor the original side. Finish by moving the 12 back by dividing.

$$12\left(\frac{7}{4}b^2 - \frac{35}{12}b - \frac{14}{3}\right) = y \cdot 12$$

$$21b^2 - 35b - 56 = y \cdot 12$$

$$7(3b^2 - 5b - 8) \quad \boxed{\frac{7(b+1)(3b-8)}{12} = \frac{12y}{12}}$$

$$\begin{array}{c} \begin{array}{cc} -8 & -24 \\ +3 & -5 \end{array} \\ \begin{array}{cc} 3b & +1 \\ -8 & -8 \end{array} \end{array}$$

factor.

Our book calls this factoring using a quadratic pattern.

$$c^{10} + c^5 - 42$$

$$\begin{array}{c} \begin{array}{cc} -42 \\ 7 & -6 \\ & 1 \end{array} \\ \begin{array}{cc} c^5 & +7 \\ c^{10} & +7c^5 \\ -6c^5 & -42 \end{array} \end{array} \quad (c^5 + 7)(c^5 - 6)$$

factor.

$$2p^8 + 5p^4 - 3$$

$$(2p^4 - 1)(p^4 + 3)$$

$$\begin{array}{c} \begin{array}{cc} -1 & -6 \\ +6 & -1 \\ +5 & \end{array} \\ \begin{array}{cc} p^4 & +3 \\ 2p^4 & +6p^4 \\ -1 & -3 \end{array} \end{array}$$

$$2p^8 + p^4 - 3 = (p^4 - 1)(2p^4 + 3)$$

$$(p^2 + 1)(p^2 - 1)(2p^4 + 3)$$