

$$\begin{array}{r}
 \textcircled{1} \quad x^2 + 4 \overline{) x^3 - 2x^2 + 4x - 8} \\
 \underline{-(x^3 \phantom{+ 4x} + 4x)} \\
 -2x^2 - 8 \\
 \underline{-(-2x^2 - 8)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \textcircled{2} \quad 8x^6 + 12x^4 + 6x^2 + 2x - 5 \\
 \underline{2x + 1} \\
 4x^5 - 2x^4 + 7x^3 - 7.5x^2 + 4.75x - 1.375 \\
 \underline{2x + 1} \overline{) 8x^6 + 0x^5 + 12x^4 + 0x^3 + 6x^2 + 2x - 5} \\
 \underline{-(8x^6 + 4x^5)} \\
 -4x^5 + 12x^4 \\
 \underline{-(-4x^5 - 2x^4)} \\
 14x^4 + 0x^3 \\
 \underline{-(14x^4 + 7x^3)} \\
 -7x^3 + 6x^2 \\
 \underline{-(-7x^3 - 3.5x^2)} \\
 9.5x^2 + 2x \\
 \underline{-(9.5x^2 + 4.75x)} \\
 -2.75x - 5 \\
 \underline{-(-2.75x - 1.375)} \\
 -3.625
 \end{array}$$

$$\begin{array}{r}
 \phantom{x^2-2y} \overline{x^2-2y} \\
 x^2-2y \overline{) x^4 - 4x^2y + 4y^2} \\
 \underline{-(x^4 - 2x^2y)} \phantom{+ 4y^2} \\
 \phantom{x^4 - } -2x^2y + 4y^2 \\
 \underline{-(-2x^2y + 4y^2)} \\
 \phantom{x^4 - } \phantom{-2x^2y + } 0
 \end{array}$$

~~$-2x^2y$~~   
 ~~$x^2$~~

$$\begin{array}{r} 3x + 2 \\ 2x - 1 \overline{) 6x^2 + x + k} \\ \underline{-(6x^2 - 3x)} \phantom{k} \\ 4x + k \\ \underline{-(4x - 2)} \\ 0 \end{array}$$

$$k + 2 = 0$$
$$\boxed{k = -2}$$

What is  $k$   
if  $2x - 1$  is  
a factor of  
 $6x^2 + x + k$

$$\begin{array}{r} 4x - 13 \\ x + 1 \overline{) 4x^2 - 9x + k} \\ \underline{-(4x^2 + 4x)} \phantom{k} \\ -13x + k \\ \underline{-(-13x - 13)} \\ 3 \end{array}$$

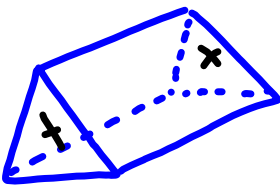
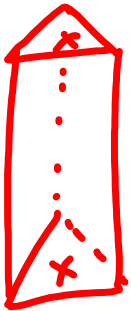
$$k + 13 = 3$$

$$k = 3 - 13$$

$$\boxed{k = -10}$$

What is  $k$   
if the  
remainder  
is 3?

A Toblerone box is a triangular prism  
 The volume of the box is  $(6x^3 + 23x^2 + 29x + 12) \text{ cm}^3$   
 and the area of the base is  $(6x^2 + 17x + 12) \text{ cm}^2$ .  
 What expression represents the height?

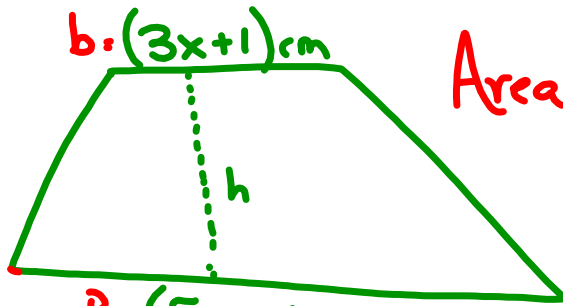


$$V = A_b \cdot h \quad h = \frac{V}{A_b}$$

$$\begin{array}{r}
 \phantom{6x^2 + 17x + 12} \overline{) 6x^3 + 23x^2 + 29x + 12} \\
 \underline{-(6x^3 + 17x^2 + 12x)} \\
 6x^2 + 17x + 12 \\
 \underline{-(6x^2 + 17x + 12)} \\
 0
 \end{array}$$

$$h = \underline{(x+1) \text{ cm}}$$

Find the algebraic expression that represents the height of the trapezoid.



$$\text{Area} = (12x^2 - 11x + 2) \text{ cm}^2$$

$$A = \frac{(B+b) \cdot h}{2} \quad \textcircled{1} * 2$$

$$\textcircled{2} 2A = (B+b)h$$

$$B + b = (5x - 3) + (3x + 1) = 8x - 2$$

$$h = \underline{(3x - 2)} \text{ cm}$$

$$\textcircled{1} 2 \cdot A = 24x^2 - 22x + 4$$

$$\textcircled{2} \begin{array}{r} 3x - 2 \\ 8x - 2 \overline{) 24x^2 - 22x + 4} \\ \underline{-(24x^2 - 6x)} \phantom{+ 4} \\ -16x + 4 \\ \underline{-(16x + 4)} \\ 0 \end{array}$$