

Starter

7 FEB 2018

Write in factored form.

1) $18x^2 + 9x - 12$

$$3(6x^2 + 3x - 4)$$

Factor completely.

1. $\underline{12x} - \underline{16y}$

1. $\underline{4(3x - 4y)}$

2. $\underline{x^2} - \underline{5x}$

$$\begin{array}{l} x \cdot \underline{x} = x^2 \\ x \cdot \underline{\quad} = 5x \end{array}$$

2. $\underline{x(x - 5)}$

3. $\underline{4x^2} - \underline{6xy}$

3. $\underline{2x(2x - 3y)}$

$$2x$$

$$2x \cdot \underline{2x} = 4x^2$$

$$2x \cdot \underline{3y} = 6xy$$

4. $\underline{2a} - \underline{6b} - \underline{4c}$

$2 \cdot \underline{a} = 2a$

$2 \cdot \underline{3b} = 6b$

$2 \cdot \underline{2c} = 4c$

4. $\underline{2(a-3b-2c)}$

5. $\underline{6x} + \underline{11x^2} - \underline{12xy}$

$x \cdot \underline{6} = 6x, \quad x \cdot \underline{11x} = 11x^2, \quad x \cdot \underline{12y} = 12xy$

$x \cdot \underline{11x} = 11x^2$

$x \cdot \underline{12y} = 12xy$

5. $\underline{x(6 + 11x - 12y)}$

ZERO PRODUCT PROPERTY:

If $a=0$ OR $b=0$ then $ab=0$

$0 \cdot b = 0$

$a \cdot 0 = 0$

a and b are known as factorsThe zero product property is used to solve an equation when one side is 0 and the other side is a product of polynomials (factors). The solutions are called roots or zeros

7. $\underline{(x+5)} \underline{(x-3)} = 0$

$a \cdot b$

$0(\quad) = 0$

$x+5=0$

$x = \underline{-5}$

$x-3=0$

$x = \underline{3}$

8. $\underline{(x-4)} \underline{(2x-6)} = 0$

$\underline{x-4} = 0$

$\underline{2x-6} = 0$

9. $x(2x-7) = 0$

8. $(x-4)(2x-6) = 0$ $2x^2 - 4x + 2x - 6 = 0$

$$\begin{array}{r} x-4=0 \\ +4 \quad +4 \\ \hline \end{array}$$

$$x=4$$

Check

$$(4-4)(2 \cdot 4 - 6) = 0$$

$$0(2) = 0 \quad \checkmark$$

$$\begin{array}{r} 2x-6=0 \\ +6 \quad +6 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{6}{2}$$

$$x=3$$

$$(3-4)(2 \cdot 3 - 6) = 0$$

$$(-1)(0) = 0 \quad \checkmark$$

9. $x(2x-7) = 0$

$$x=0 \quad \& \quad \begin{array}{r} 2x-7=0 \\ +7 \quad +7 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{7}{2}$$

$$x=0 \quad \text{or} \quad \frac{7}{2}$$

Zero Product Property Worksheet

Solve

1. $(x-2)(x-3)=0$ _____

2. $(x+5)(x+3)=0$ _____

3. $x(x-1)=0$ _____

4. $(2x-2)(3x+3)=0$ _____

5. $2x(3x-6)=0$ _____

6. $(-x+5)(x-5)=0$ _____

7. $x(x+8)=0$ _____

8. $x(2x-1)(3x+9)=0$ _____

9. $(2x-1)(3x+1)(x+2)=0$ _____

10. $(\frac{1}{2}x+4)(\frac{1}{3}x-3)x=0$ _____