

FACTORING DRILL

Factor this expression: $4x+8y$

Simplify this expression: $\frac{3x-6y}{3}$

Simplify this expression: $\frac{12x^4}{3x^2}$

Factor this expression: $25x^2-9y^2$

Factor this expression: $27-8x^3$

Solutions

$$4x + 8y \rightarrow (x + 2y)$$

$$\frac{3x-6y}{3} =$$

$$\frac{3(x-2y)}{3} =$$

$$\frac{\cancel{3}(x-2y)}{\cancel{3}} = x-2y$$

$$\frac{12x^4}{3x^2} =$$

$$\frac{3 \cancel{4} x^2 \cancel{x^2}}{3x^2} =$$

$$\frac{\cancel{3} \cancel{4} \cancel{x^2} x^2}{\cancel{3x^2}} = 4x^2$$

$$25x^2-9y^2=(5x-3y)(5x+3y)$$

This is a difference of cubes, where $a^3-b^3=(a-b)(a^2+ab+b^2)$. In this case, a is equal to 3, and b is equal to $2x$. So the solution is:

$$27-8x^3 =$$

$$3^3 - ((2x)^3) =$$

$$(3-2x)(3^2+3(2x)+(2x)^2) = (3-2x)(9+6x+4x^2)$$

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