GQ: How do we apply algebra to equations with literals?

HSA.CED.A.4 Rearrange formulas to highlight a quantity of interest 11.1 Wed. 23 April

Simplify each expression by "collecting like terms"

1. $3x + 2x$

$= 5x$

$= x + x + x + x + x$

$= 5x$

2. $5\pi - 2\pi + 4\pi$

$= (5 - 2 + 4)\pi$

$= 7\pi$

Factoring
Distributive property

Simplify each expression by "collecting like terms"

1. $3x - 2x + 7y$

$= x + 7y$

3. $-k + 7\sqrt{2} + 2k + 3\sqrt{2}$

$= k + 10\sqrt{2}$

2. $5z + 5\pi - 2\pi + z$

$= 6z + 3\pi$

$= 6z + 3\pi$

4. $5\pi x - 2\pi x + 9y$

$= (5\pi - 2\pi)x +$ $9y$

$= 3\pi x + 9y$

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Solve each equation for the unknown

1. $\frac{k}{\sqrt{3}} = 11$

$\sqrt{3} \cdot \frac{k}{\sqrt{3}} = \sqrt{3} \times 11$ (*$\sqrt{3}$)

$k = 11\sqrt{3}$

$k = \pi\sqrt{3}$

2. $5z - 2\pi = 4\pi + z$

$-z \quad +2\pi \quad +2\pi - z$

$4z = 6\pi \quad \div 4$

$z = \frac{6}{4}\pi$

$z = \frac{3}{2}\pi$

Solve each equation for the unknown

1. $4x - x\sqrt{3} = 11$

Factor

$(4 - \sqrt{3})x = 11$

$\div (4 - \sqrt{3})$

$x = \frac{11}{4 - \sqrt{3}}$

2. $5\pi x - 2\pi x = \pi x + 14$

$5\pi x - 2\pi x - \pi x = 14$

$(5\pi - 2\pi - \pi)x = 14$

$2\pi x = 14 \quad \div 2\pi$

$x = \frac{14}{2\pi} = \frac{7}{\pi}$