

- Graph $3x - 4y = -12$.
- One side of a rectangle is 3 feet longer than twice another side. Find the sides of the rectangle if its perimeter is 108 ft.
- Ann and Beatrix are sisters. Ann's age is five less than three times Beatrix's age. How old are they if the sum of their ages is 35?
- Simplify each of the following.

a) $\sqrt{48} - 2\sqrt{75} + 5\sqrt{12}$	e) $\frac{10x - 2x^2}{x^2 - 25}$	i) $\frac{(2ab^3)^2 (-3a^2b^2)^3}{(-2ab^2)^4}$
b) $\frac{\sqrt{200}}{\sqrt{50}}$	f) $\frac{3}{m-2} - \frac{4m+1}{m}$	j) $\left(\frac{-2x^3y^2x^6}{3y(x^2)^3}\right)^2$
c) $(\sqrt{5} + 4)(\sqrt{5} - 2)$	g) $(-3a)^2 (-2a^2b)^3$	
d) $(\sqrt{a} - \sqrt{b})^2$	h) $x(3 - 2x) - (2x - 1)^2$	

5. Compute the exact value of $2x^2 - 5x + 1$ if $x = 3\sqrt{2} - 1$.

6. Simplify each of the following.

a) $3(4)^2$	b) $(3 \cdot 4)^2$	c) $3(x - 2)^2$	d) $(3x - 6)^2$
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7. Based on the previous problems, write a number in the box to make the statement shown below true.

$$(5a - 10)^2 = [5(a - 2)]^2 = \square(a - 2)^2$$

8. Solve the following equations. Make sure to check your solutions.

a) $\frac{x+1}{3} - \frac{2x-1}{5} = \frac{x}{2} - 4$	c) $2x^2 - 32x = 0$
b) $(x-3)^2 - (2x-1)^2 = 4(x+2)$	d) $2x^3 - 32x = 0$

9. Compute the perimeter and area of the figure shown on the picture below. Include units in your computation and answer.

