

$$2b^2 - 12 - 5b = 12 - 12 \quad \text{Subtract both sides by 12}$$

$$2b^2 - 5b - 12 = 0$$

$$(2b + 3)(b - 4) = 0 \quad \text{factor the left side of the equation}$$

$$2b + 3 = 0 \quad ; \quad b - 4 = 0 \quad \text{equate the factors to zero}$$

$$2b = -3 \quad ; \quad b = 4 \quad \text{simplify}$$

$$2b / 2 = -3 / 2$$

$$b = -3/2$$

checking:

$$b = -3/2 \quad ;$$

$$b = 4$$

$$2b^2 - 5b = 12$$

$$2b^2 - 5b = 12$$

$$2(-3/2)^2 - 5(-3/2) = 12$$

$$2(4)^2 - 5(4) = 12$$

$$2(9/4) + 15/2 = 12$$

$$2(16) - 20 = 12$$

$$9/2 + 15/2 = 12$$

$$32 - 20 = 12$$

$$24/2 = 12$$

$$12 = 12$$

$$12 = 12$$

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