

1. A rectangle: length x , width $x - 3$, area 40. Write the equation.

$$x(x - 3) = 40$$

$$\text{Answer: } x^2 - 3x - 40 = 0$$

2. Solve it and give the dimensions.

$$(x - 8)(x + 5) = 0; x = 8$$

$$\text{Answer: } 8 \text{ by } 5$$

3. Two consecutive integers multiply to 56. Write the equation.

$$x(x + 1) = 56$$

$$\text{Answer: } x^2 + x - 56 = 0$$

4. Solve: consecutive integers with product 56.

$$(x + 8)(x - 7) = 0$$

$$\text{Answer: } 7 \text{ \& } 8 \text{ (or } -8 \text{ \& } -7)$$

5. A number plus its square is 30. Find it.

$$x + x^2 = 30; x^2 + x - 30 = 0$$

$$(x+6)(x-5)$$

$$\text{Answer: } x = 5 \text{ or } -6$$

6. A square garden's area is 49 sq ft. Side length?

$$s^2 = 49$$

$$\text{Answer: } 7 \text{ ft}$$

7. A rectangle is 2 longer than wide, area 35. Dimensions?

$$w(w + 2) = 35; w^2 + 2w - 35 = 0$$

$$(w + 7)(w - 5)$$

$$\text{Answer: } 5 \text{ by } 7$$

8. A photo (x by x) gets a 2-in border; framed area is 100. Find x .

$$(x + 4)^2 = 100; x + 4 = 10$$

$$\text{Answer: } x = 6 \text{ in}$$

9. A rectangle's length is 3 more than twice its width; area is 44. Find both dimensions. ★ challenge

$$w(2w + 3) = 44; 2w^2 + 3w - 44 = 0$$

$$(2w + 11)(w - 4)$$

$$\text{Answer: } w = 4, \text{ length } 11$$

10. The product of two numbers that differ by 5 is 84. Set up and solve, giving both pairs. ★ challenge

$$x(x + 5) = 84; x^2 + 5x - 84 = 0$$

$$(x + 12)(x - 7)$$

$$\text{Answer: } 7 \text{ \& } 12, \text{ or } -12 \text{ \& } -7$$