

14

Jan. 10 bell ringer
Solve.

$$1) y^2 - 16y + 64 = 0 \quad y = 8$$
$$(y - 8)^2 = 0$$

$$2) 3rs - 4r + 6s - 8 = 0$$

$$s = \frac{4}{3} \quad r = -2$$

$$52) \left(\frac{1}{4}b^2 = 16 \right) \quad b^2 = 64$$

$$\frac{1}{4}b^2 - 16 = 0 \quad \frac{1}{4}b^2 - \frac{64}{4} = 0$$

$$\frac{1}{4}(b^2 - 64) = \frac{1}{4}(b^2 - 64) = 0$$

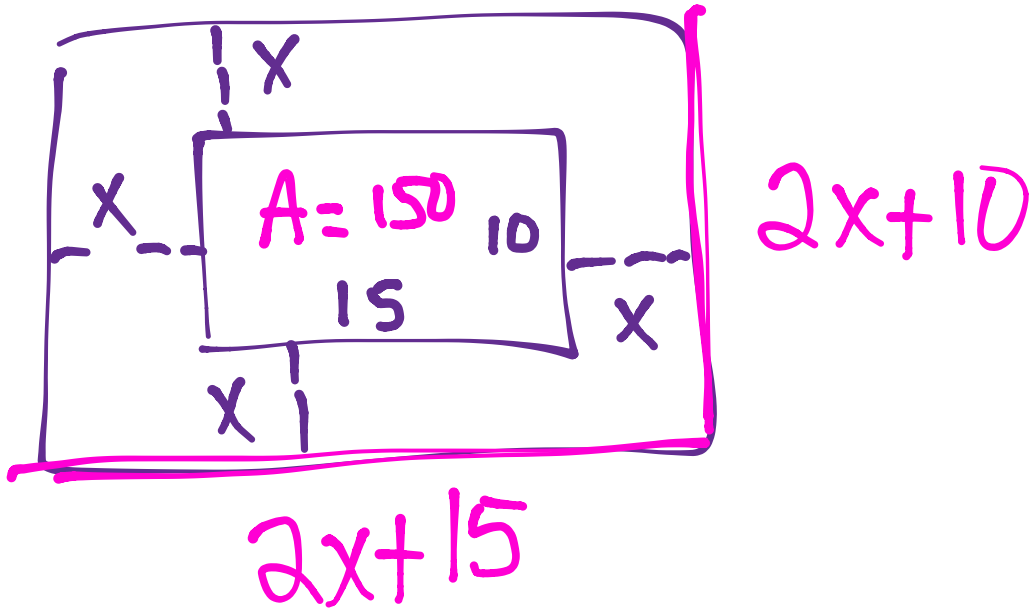
$$\frac{1}{4}(b + 8)(b - 8) = 0$$
$$b = -8 \text{ or } 8$$

Learning target:

You can solve word problems that use factoring.

Word problem WS:

13.



$$(2x+15)(2x+10) = 300$$

$$4x^2 + 50x + 150 - 300 = 0$$

$$4x^2 + 50x - 150 = 0$$

$$2(2x^2 + 25x - 75) = 0$$

F	S
-150	25
	25

$$2(2x-5)(x+15) = 0$$

30	5
	25

$$2x - 5 = 0 \text{ or } x + 5 = 0$$

$$\frac{2}{30} = \frac{1}{15} \quad \frac{2}{-5}$$

$$\bullet x = 2\frac{1}{2} \quad x = -15$$

The strip is $2\frac{1}{2}$ ft wide.

20) $x = 1^{\text{st}}$ even int
 $x + 2 = 2^{\text{nd}}$ " "

$$x(x+2) = 120$$

$$x^2 + 2x - 120 = 0$$

$$\begin{array}{r} -120 \mid 2 \\ \hline 12 \cdot 10 \mid 2 \end{array}$$

$$(x+12)(x-10) = 0$$

$$x = -12 \text{ or } x = 10$$

$$x+2 = -10$$

$$x+2 = 12$$

The integers are -12, -10 and 10, 12.

Problems 1-12: use the formula

$$h = vt - 16t^2$$

1)

$$480 = 5v - 16(5)^2$$

$$t = 5$$

$$480 = 5v - 16(25)$$

$$h = 480$$

$$480 = 5v - 400$$
$$\begin{array}{r} +400 \\ \hline \end{array}$$

$$880 = 5v$$

$$v = 176 \text{ ft per sec}$$

$$3) \quad h = vt - 16t^2$$

$$336 = 160t - 16t^2$$

$$16t^2 - 160t + 336 = 0$$

$$16(t^2 - 10t + 21) = 0$$

$$16(t - 7)(t - 3) = 0$$

$$t = 7 \text{ sec or } t = 3 \text{ sec}$$

→

$$h = vt - 16t^2 \quad z$$

$$0 = 192t - 16t^2$$

$$0 = 16t(12 - t)$$

~~$16t = 0$~~

or

$$12 - t = 0$$

$$12 = t$$

~~$t = 0$~~

12 sec

Assignment:

19

Word problem WS

4,5,6,10,11,12,14,16,18,21,23,25

34)

$$4m^2 - 24m + 36 = 0$$

$$4(m^2 - 6m + 9) = 0$$

$$4(m - 3)^2 = 0$$

$$m - 3 = 0$$

$$m=3$$

$$40) \quad 4x^2 = 80x - 400$$

$$4x^2 - 80x + 400 = 0$$

$$4(x^2 - 20x + 100) = 0$$

$$4(x-10)^2 = 0$$

38)

$$x^2 + 8x + 16 = 25$$

$$= 25 - 25$$

$$x^2 + 8x - 9 = 0$$

$$(x + 9)(x - 1) = 0$$

$$x = -9 \text{ or } 1$$

3b)

$$a^2 + \frac{10}{7}a + \frac{25}{49} = 0$$

$$(a + \frac{5}{7})^2 = 0$$

$$(a + \frac{5}{7}) = 0$$

$$a = -\frac{5}{7}$$

$$49a^2 + 70a + 25 = 0$$

$$(7a + 5)^2 = 0$$