## Bellwork Alg 2A Thursday, March 23, 2017

1. Fill in the blanks to "Complete the Square".

a) $x^2 + 12x + \_\_\_\_\_ = (x \_\_\_\_\_)^2$

b) $x^2 - 26x + \_\_\_\_\_ = (x \_\_\_\_\_)^2$

c) $x^2 + \_\_\_\_\_ + 81 = (x \_\_\_\_\_)^2$

d.) $x^2 - \_\_\_\_\_ + 225 = (x \_\_\_\_\_)^2$

2. Find the exact solutions for each equation.

a) $(x + 13)^2 = 729$

b) $(x - 1)^2 = 96$

3. For each equation do the following.
- Leave the constant on the right side.
- Factor the left side.
- Finish by solving for $x$.

a). $x^2 + 14x + 49 = 100$

b). $x^2 - 8x + 16 = 23$

## Bellwork Alg 2A Thursday, March 23, 2017 ANSWERS

1. Fill in the blanks to "Complete the Square".

a) $x^2 + 12x + \underline{36} = (x \underline{+6})^2$

b) $x^2 - 26x + \underline{169} = (x \underline{-13})^2$

c) $x^2 + \underline{18x} + 81 = (x \underline{+9})^2$

d.) $x^2 - \underline{30x} + 225 = (x \underline{-15})^2$

2. Find the exact solutions for each equation.

a) $\sqrt{(x+13)^2} = \sqrt{729}$

$x + 13 = \pm 27$ (subtract 13)

$+27 - 13 = 14$

$-27 - 13 = -40$

$x = -40, 14$

b) $\sqrt{(x-1)^2} = \sqrt{96} \rightarrow \sqrt{16 \cdot 6}$

$x - 1 = \pm 4\sqrt{6}$ (add 1)

$x = 1 \pm 4\sqrt{6}$

3. For each equation do the following.
- Leave the constant on the right side.
- Factor the left side.
- Finish by solving for $x$.

a). $x^2 + 14x + 49 = 100$

49: 7, 7; 14

$\sqrt{(x+7)^2} = \sqrt{100}$

$x + 7 = \pm 10$ (subtract 7)

$10 - 7$

$-10 - 7$

$x = -17, 3$

b). $x^2 - 8x + 16 = 23$

16: $-4$, $-4$; $-8$

$\sqrt{(x-4)^2} = \sqrt{23}$

$x - 4 = \pm\sqrt{23}$ (add 4)

$x = 4 \pm \sqrt{23}$