PRE-CALCULUS 11 QUADRATIC EQUATIONS PERFECT SQUARE TRINOMIALS

The following form perfect square trinomials. Factor each one and show both ways your answer can be written.



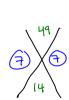
$$x^{2}+10x+25$$

$$(x+5)(x+5) \qquad \text{or} \qquad (x+5)^{2}$$



$$x^{2}-6x+9$$

$$(3) \qquad (x-3)(x-3) \qquad (x-3)^{2}$$



$$-2x^{2}-28x-98$$

$$-2(x^{2}+14x+49)$$

$$-2(x+7)(x+7) \text{ or } -2(x+7)^{2}$$

$$\frac{1}{4} \left(x^{2} - 16x + 64 \right)$$

$$\frac{1}{4} \left(x - 8 \right) \left(x - 8 \right) \quad \text{or} \quad \frac{1}{4} \left(x - 8 \right)^{2}$$

In order for a trinomial to be a perfect square, what properties must it have?

Both sets of brackets must be exactly the

What would have to be added to each of the following to make it a perfect square trinomial? Then show the factored form of the expression.

$$x^2 + 12x + 36$$

$$(x+6)^2$$

$$x^2-18x+$$

$$\left(x-9\right)^{2}$$

$$x^2 - 20x + _0$$

$$\left(\times - 10 \right)^2$$

$$x^2+9x+$$
 $\frac{81}{4}$

$$\left(\chi + \frac{q}{a}\right)^2$$

$$x^2 + \frac{2}{3}x + \frac{1}{9}$$

$$\left(\times + \frac{1}{3} \right)^2$$

$$x^2 - \frac{3}{5}x + \frac{9}{100}$$

$$\left(\times - \frac{3}{10} \right)^2$$

$$x^2 + ax + \underline{\underline{\alpha}^2}$$

$$\left(\times + \frac{a}{a} \right)^2$$

Assignment: Perfect Square Trinomial Assignment #1 - 18

PRE-CALCULUS 11 QUADRATIC EQUATIONS PERFECT SQUARE TRINOMIALS ASSIGNMENT

A. Factor the following perfect square trinomials.

1)
$$x^2 - 8x + 16$$

2)
$$x^2 + 20x + 100$$

3)
$$x^2 + 16x + 64$$

4)
$$x^2 + 30x + 225$$

5)
$$x^2 - 2x + 1$$

6)
$$x^2 - 6x + 9$$

7)
$$3x^2 + 12x + 12$$

8)
$$-2x^2 + 24x - 72$$

9)
$$-x^2-10x-25$$

10)
$$\frac{1}{2}x^2 - 6x + 18$$

11)
$$\frac{1}{3}x^2 + \frac{4}{3}x + \frac{4}{3}$$

12)
$$-\frac{1}{2}x^2 + 7x - \frac{49}{2}$$

B. What would have to be added to each of the following to make it a perfect square trinomial? Then show the factored form of the expression.

13)
$$x^2 + 10x +$$

14)
$$x^2 - 24x + \underline{\hspace{1cm}}$$

15)
$$x^2 + 3x +$$

16)
$$x^2 - 7x +$$

17)
$$x^2 + \frac{1}{2}x + \underline{\hspace{1cm}}$$

18)
$$x^2 - \frac{2}{3}x + \underline{\hspace{1cm}}$$

Answers

1)
$$(x-4)^2$$

2)
$$(x+10)^2$$

3)
$$(x+8)^2$$

4)
$$(x+15)^2$$

5)
$$(x-1)^2$$

6)
$$(x-3)^2$$

7)
$$3(x+2)^2$$

8)
$$-2(x-6)^2$$

9)
$$-(x+5)^2$$

10)
$$\frac{1}{2}(x-6)^2$$

11)
$$\frac{1}{3}(x+2)^2$$

11)
$$\frac{1}{3}(x+2)^2$$
 12) $-\frac{1}{2}(x-7)^2$

13) 25,
$$(x+5)$$

13) 25,
$$(x+5)^2$$
 14) 144, $(x-12)^2$

15)
$$\frac{9}{4}$$
, $\left(x + \frac{3}{2}\right)^2$ 16) $\frac{49}{4}$, $\left(x - \frac{7}{2}\right)^2$

16)
$$\frac{49}{4}$$
, $\left(x - \frac{7}{2}\right)^2$

17)
$$\frac{1}{16}$$
, $\left(x + \frac{1}{4}\right)^2$ 18) $\frac{1}{9}$, $\left(x - \frac{1}{3}\right)^2$

18)
$$\frac{1}{9}$$
, $\left(x - \frac{1}{3}\right)^{\frac{1}{3}}$