HW 5 - 5 Answers

1.
$$2a(x-2)(x^2+2x+4)$$

$$2.x(x + 2)(x - 2)(x - 1)(x + 1)$$

$$3.(x-6)(x-1)$$

$$4.(x^{3m}-5)(x^{3m}-5)$$

$$5.\{\pm 1, \pm i\}$$

$$6.\{0, \pm 2, \pm 2i\}$$

$$7.\{\pm 1\}$$

8.
$$\{0, \pm i\sqrt{6}, \pm \sqrt{3}\}$$

1.
$$2ax^3 - 16a$$

 $20(x^3 - 8)$
= $20(x-2)(x^2 + 2x + 4)$

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

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

2.
$$x^{5} - 5x^{3} + 4x$$

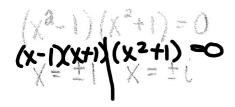
 $\times (x^{4} - 5x^{2} + 4)$
 $= x(x^{2} - 4)(x^{2} - 1)$
 $= x(x + 2)(x - 2)(x - 1)(x + 1)$

4.
$$x^{6m} - 10x^{3m} + 25$$

$$(x^{3m} - 5)(x^{3m} - 5)$$

Solve each of the following (factor completely first):

5.
$$x^4 - 1 = 0$$



7.
$$x^4 - 2x^2 - 1 = 0$$

$$(\chi^2 - 1)(\chi^2 - 1) = 0$$

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

$$\{\pm 1\}$$

6.
$$x^{6} - 16x^{2} = 0$$

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

$$x^{2}(x+2)(x-2)(x^{2}+4) = 0$$

$$x^{2}(x+2)(x-2)(x^{2}+4) = 0$$

$$x^{2} = 0 \quad x^{2} = 1$$

$$x^{2} = 0 \quad x^{2} = 1$$

8.
$$x^5 + 3x^3 - 18x = 0$$

$$X(X^4 + 3X^2 - 18) = 0$$

$$X(X^2+6)(X^2-3)=0$$

$$X = 0$$
 $X^2 = -6$ $X^2 = 3$
 $X = \pm i\sqrt{6}$ $X = \pm \sqrt{3}$

Activity:

Your group has been given a set of cards. Each card has writing on 1 - 4 sides. Some of the sides are questions, others are answers. Your job is to reassemble the puzzle by matching the questions to the answers. You should work as a team. Each working on different questions. Helping where needed.