

HW 5 - 5 Answers

Quiz on Days 3&4 today

Tomorrow's: Factor & Solve

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

Oct 28-8:39 PM

1. $2ax^3 - 16a$

$$2a(x^3-8)$$

$$= 2a(x-2)(x^2+2x+4)$$

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

$$x(x^4 - 5x^2 + 4)$$

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

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

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

$$x-3 = u$$

$$u^2 - u - 6$$

$$(u-3)(u+2)$$

$$(x-3-3)(x-3+2)$$

$$(x-6)(x-1)$$

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

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

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Solve each of the following (factor completely first):

5. $x^4 - 1 = 0$

$$(x^2 - 1)(x^2 + 1) = 0$$

$$x = \pm 1 \quad x = \pm i$$

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

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

$$(x^2 - 1)(x^2 - 1) = 0$$

$$x^2 = 1 \quad x^2 = 1$$

$$x = \pm 1 \quad x = \pm 1$$

$$\{\pm 1\}$$

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

$$x^2(x^4 - 16) = 0$$

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

$$x^2 = 0 \quad x^2 = 4 \quad x^2 = -4$$

$$x = 0 \quad x = \pm 2 \quad x = \pm 2i$$

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

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

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

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

$$x = 0 \quad x^2 = -6 \quad x^2 = 3$$

$$x = \pm i\sqrt{6} \quad x = \pm \sqrt{3}$$

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

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Warm-UP No Calculators. Match the equation to the graph.

① $y = x(x - 2)(x + 1)$

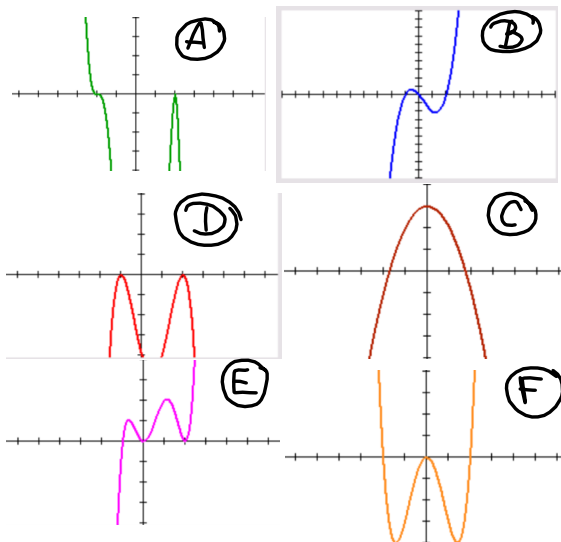
② $y = -(x - 2)^2(x + 1)^2$

③ $y = -(x - 2)^2(x + 2)^3$

④ $y = x^2(x - 2)(x + 2)$

⑤ $y = x^2(x + 1)(x - 2)^2$

⑥ $y = -x^2 + 3$



Warm-UP Answers.

$$\textcircled{1} \underline{y = x^0(x-2)^2(x+1)^{-1}} \quad \text{B}$$

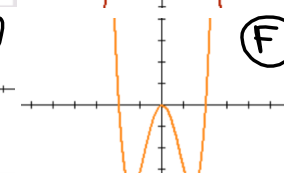
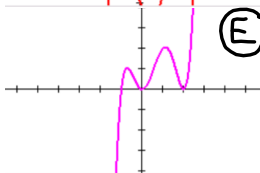
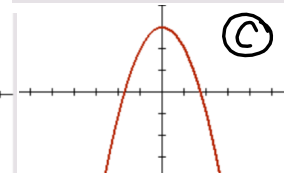
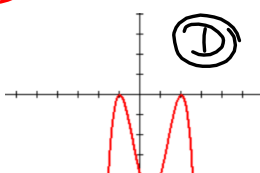
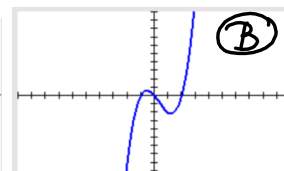
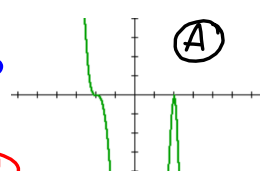
$$\textcircled{2} \underline{y = -(x-2)^2(x+1)^2} \quad \text{D}$$

$$\textcircled{3} \underline{y = -(x-2)^2(x+2)^3} \quad \text{A}$$

$$\textcircled{4} \underline{y = x^2(x-2)(x+2)} \quad \text{F}$$

$$\textcircled{5} \underline{y = x^2(x+1)(x-2)^2} \quad \text{E}$$

$$\textcircled{6} \underline{y = -x^2 + 3} \quad \text{C}$$



QUIZ

Activity: You need Day 6's blank page & calculator

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. Number & clearly show work for each problem you do. There are 20 problems and answers. Start with the card marked 'X'.

Do not write on the cards.

Oct 29-7:38 PM

Nov 12-8:37 PM