Happy Wednesday, October 12th!

Do Now:

Find your worksheet from yesterday and have it on your desk.

Oct 12-8:06 AM

Today:

-Review questions from yesterday

-Station Review (complete in notebook)

    -Factoring all types

    -Finding Roots

    -Division

    -Rational Root Theorem

    -Writing Equations

    -ME!!

Oct 12-8:07 AM

Questions?

②

$$X^3 = 216$$

$$X = 6$$

$$X^3 - 216 = 0$$

$$\boxed{X = 6}$$

$$(x - 6)(x^2 + 6x + 36) = 0$$

$$\boxed{\begin{array}{c} a^3 - b^3 \\ (a - b)(a^2 + ab + b^2) \end{array}}$$

$$x^2 + 6x + 36 = 0$$

$$X = \frac{-6 \pm \sqrt{36 - 4(1)(36)}}{2}$$

$$\boxed{X = \frac{-6 \pm i\sqrt{108}}{2}}$$

Oct 12-8:10 AM

$$6i^2 \qquad -i^2$$

$$-6 \qquad +1$$

Oct 12-10:30 AM

2

$$3x^4 + 6x - 8x + 10$$

$$\frac{\pm 2, \pm 5, \pm 1, \pm 10}{\pm 1, \pm 3}$$

$$\pm 2, \pm \frac{2}{3}, \pm 5, \pm \frac{5}{3}, \pm 1, \pm \frac{1}{3}, \pm \frac{10}{1}, \pm \frac{10}{3}$$

Oct 12-10:30 AM

Factor

$$2x^4 + 7x^2 - 30$$

$$\begin{array}{c|c} a \cdot c & b \\ -60 & 7 \\ \hline 12, -5 & \end{array}$$

$$2x^4 + 12x^2 - 5x^2 - 30$$

$$2x^2(x^2+6) - 5(x^2+6)$$

$$\boxed{(2x^2-5)(x^2+6)}$$

Factor ↗

Solve $= 0$

Oct 12-8:11 AM

3

Station One: Factoring All Types

1. $25x^2 - 100$

3. $8x^3 + 27$

2. $x^4 - 8x^2 - 9$

4. $3x^2 + x - 10$

Oct 12-9:08 AM

Station One: Factoring All Types

1. $25x^2 - 100$

3. $8x^3 + 27$

2. $x^4 - 8x^2 - 9$

4. $3x^2 + x - 10$

Oct 12-9:08 AM

Station Two: Finding All Roots

1. $25x^2 - 100 = 0$

3. $x^3 = 216$

2. $(x-1)(3x+2)(x-5) = 0$

4. $x^2 + 10 = -7x$

Station Two: Finding All Roots

1. $25x^2 - 100 = 0$

3. $x^3 = 216$

2. $(x-1)(3x+2)(x-5) = 0$

4. $x^2 + 10 = -7x$

Station Three: Use Division to Determine Roots

1. $(x^2 - 8x + 12) \div (\text{x-6})$

3. $(x^3 + 4x^2 + x - 9) \div (\text{x-3})$

2. $(3x^3 + 2x - 5) \div (\text{x+5})$

4. $(x^2 + 6x + 5) \div (x + 3)$

Oct 12-9:08 AM

Station Three: Use Division to Determine Roots

1. $(x^2 - 8x + 12) \div (\text{x-6})$

3. $(x^3 + 4x^2 + x - 9) \div (\text{x-3})$

2. $(3x^3 + 2x - 5) \div (\text{x+5})$

4. $(x^2 + 6x + 5) \div (x + 3)$

Oct 12-9:08 AM

Station 4: Rational Root Theorem

Find all possible roots. Then determine which are actually roots.

1. $2x^3 + 4x^2 - 7x + 5$
2. $x^4 + 4x - 8$
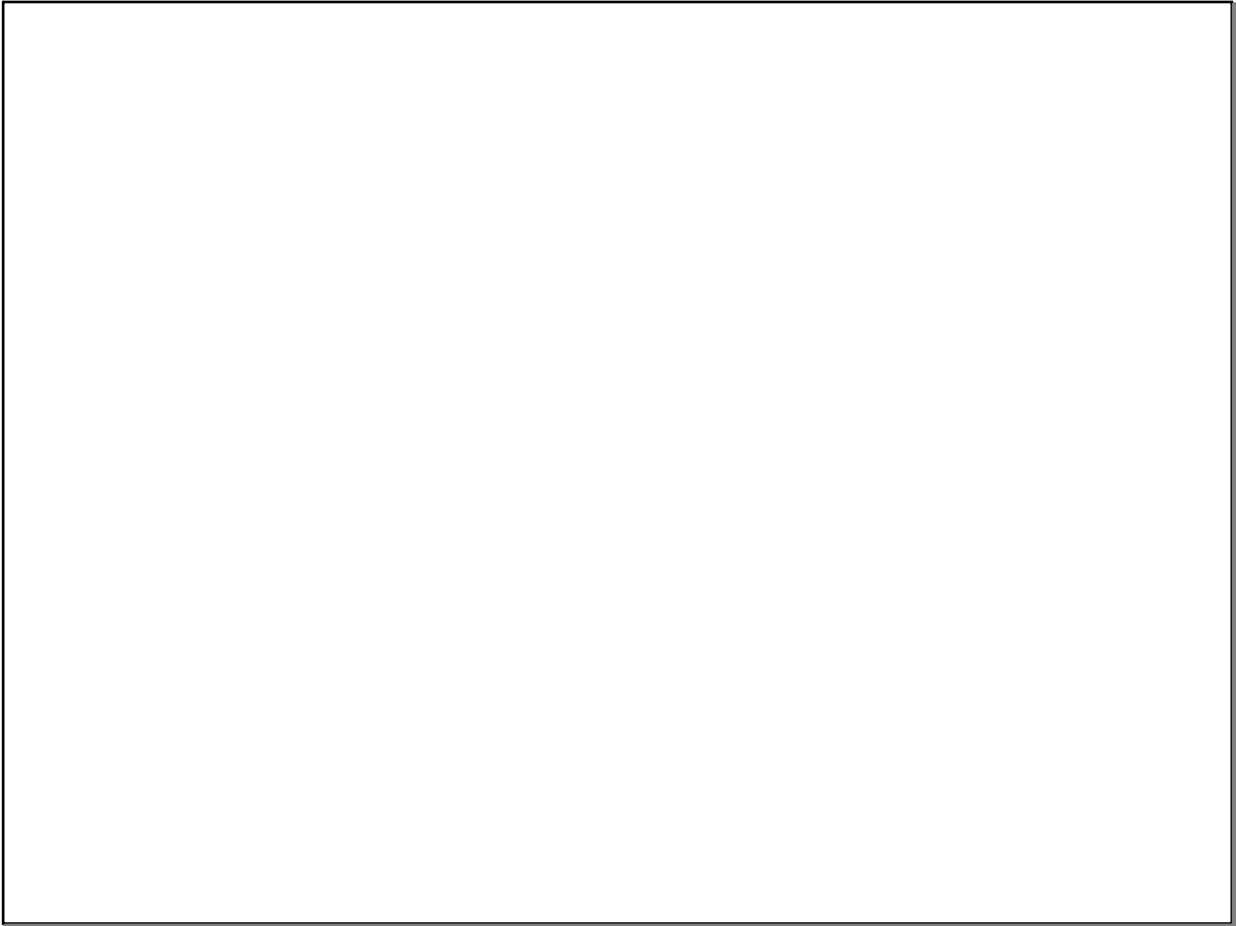
Oct 12-9:18 AM

Station 5: Writing Equations

Write the equations for the polynomials with the given roots in standard form.

1. $x = 0, 9, 9$

2. $x = 2i, 3$

Oct 12-9:11 AM