

Today's Plan:

Learning Target (standard): I will use the remainder theorem and factor to theorem to locate zeros of polynomials. I will use the zeros to factor the polynomial.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and take a quiz.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide quiz problems.

Assessment: Board work, homework check and quiz

Differentiation: Students will work at the board, go over and correct homework at their seats, and actively engage in quiz problems.

Simplify:

$$\frac{9x+4}{2x-5}$$

$$2x-5 \overline{) 9x+4}$$

$$\underline{-9x + \frac{45}{2}}$$

$$\frac{53}{2}$$

Handwritten notes: A red arrow points from the $\frac{9}{2}$ to the $9x$ term in the dividend. A red circle around $\frac{9x}{2x}$ is crossed out.

$$= \frac{9}{2} + \frac{53}{2(2x-5)}$$

List the possible rational zeros:

$$f(x) = \underline{6}x^4 + 2x^3 - x^2 + \underline{20}$$

MNZ: 4

$$p: \pm 1, \pm 2, \pm 4, \pm 5, \pm 10, \pm 20$$

$$q: \pm 1, \pm 2, \pm 3, \pm 6$$

$$\frac{p}{q}: \pm 1, \pm \frac{1}{2}, \pm \frac{1}{3}, \pm \frac{1}{6}, \pm 2, \pm \frac{2}{3}, \pm 4, \pm \frac{4}{3}, \pm 5, \pm \frac{5}{2}, \pm \frac{5}{3}, \pm \frac{5}{6}, \pm 10, \pm \frac{10}{3}, \pm 20, \pm \frac{20}{3}$$

Solve by completing the square.

$$9x^2 - 6x + 2 = 0$$

$$\frac{9x^2}{9} - \frac{6x}{9} = -\frac{2}{9}$$

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

$$\left(x - \frac{1}{3}\right)^2 = -\frac{1}{9}$$

$$x - \frac{1}{3} = \frac{1}{3}i, -\frac{1}{3}i$$

$$x = \frac{1}{3} + \frac{1}{3}i, \frac{1}{3} - \frac{1}{3}i$$