

Today's Plan:

Learning Target (standard): I will practice factoring methods and solve equations by factoring.

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 complete practice problems.

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

Assessment: Board work, homework check and homework assignment

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

p.158 #26-48 even

* QUIZ Tomorrow! *

$$26)a = -\frac{2}{3}, \frac{1}{2}$$

$$28)z = -4, 5$$

$$30)t = -7, 6$$

$$32)x = -\frac{3}{2}, 4$$

$$34)b = \frac{1}{2}, 3$$

$$36)t = -\frac{5}{2}, 3$$

$$38)x = -4, 8$$

$$40)a = 2, 8$$

$$42)y = 2, 6$$

$$44)b = -1, 3$$

$$46)x = -2, -\frac{1}{2}, 2$$

$$48)x = -\frac{1}{2}, \frac{1}{2}, \frac{2}{3}$$

Factor Completely:

$$\begin{aligned} & \underline{7ac + 4ak} - \underline{7y^2c - 4y^2k} \\ & \underline{a(7c+4k)} - \underline{y^2(7c+4k)} \\ & (7c+4k)(a-y^2) \end{aligned}$$

Factor Completely:

$$\begin{aligned} & \underline{12uv - 4u^2} + \underline{3bv - bu} \\ & \underline{4u(3v-u)} + \underline{b(3v-u)} \\ & (3v-u)(4u+b) \end{aligned}$$

Factor Completely:

$$\underline{160k^3 - 60k^2} + \underline{32k - 12}$$

$$\underline{20k^2(8k-3)} + \underline{4(8k-3)}$$

$$(8k-3)(\underline{20k^2+4})$$

$$4(8k-3)(\underline{5k^2+1})$$

Factor Completely:

$$112a^3 + 128a^2 - 42a - 48$$

$$\underline{2(56a^3 + 64a^2 - 21a - 24)}$$

$$2 \left[\underline{8a^2(7a+8)} - \underline{3(7a+8)} \right]$$

$$2(7a+8)(\underline{8a^2-3})$$

Factor Completely:

$$3a^{2n+2} + 11a^{n+2} - 20a^2$$

$$a^2(3a^{2n} + 11a^{n+2} - 20)$$

$$a^2 \left[\underbrace{3a^{2n} + 15a^n}_{60} - 4a^n - 20 \right] \quad \begin{matrix} 60 \\ \wedge \\ 15 - 4 = 11 \end{matrix}$$

$$a^2 \left[\underbrace{3a^n(a^n + 5)} - 4(a^n + 5) \right]$$

$$a^2(a^n + 5)(3a^n - 4)$$

Factor Completely:

$$-4u^2v - 45uv^2 - 50v^3$$

$$-v(4u^2 + 45uv + 50v^2)$$

$$\begin{matrix} 200 \\ \wedge \\ 40 + 5 = 45 \end{matrix}$$

$$\underline{4u^2 + 40uv} + \underline{5uv + 50v^2}$$

$$\underline{4u(u + 10v)} + \underline{5v(u + 10v)}$$

$$-v(u + 10v)(4u + 5v)$$

Factor Completely:

$$27a^4 + 36a^2b^2 - 15b^4$$

$$3(9a^4 + 12a^2b^2 - 5b^4)$$

$$\begin{array}{c} 45 \\ \wedge \\ 15 - 3 = 12 \end{array}$$

$$3 \left[\underline{9a^4 + 15a^2b^2} - 3a^2b^2 - 5b^4 \right]$$

$$3 \left[\underline{3a^2(3a^2 + 5b^2)} - b^2(3a^2 + 5b^2) \right]$$

$$3(3a^2 + 5b^2)(3a^2 - b^2)$$

Factor Completely:

$$x^8 - 10x^4 + 9$$

$$\underline{(x^4 - 9)} \underline{(x^4 - 1)}$$

$$(x^2 + 3)(x^2 - 3)(x^2 + 1)(x^2 - 1)$$

$$(x^2 + 3)(x^2 - 3)(x^2 + 1)(x + 1)(x - 1)$$

Factor Completely:

$$27x^{12n} - 125x^{6n}$$

$$x^{6n} (27x^{6n} - 125)$$

$$x^{6n} (3x^{2n} - 5)(9x^{4n} + 15x^{2n} + 25)$$

Factor Completely:

$$x^6 - 8y^9$$

$$(x^2 - 2y^3)(x^4 + 2x^2y^3 + 4y^6)$$

Factor Completely:

$$x^6 - 28x^3 + 27$$

$$\underline{(x^3 - 27)} \underline{(x^3 - 1)}$$

$$(x-3)(x^2+3x+9)(x-1)(x^2+x+1)$$

Factor Completely:

$$m^6 = m^2 \cdot m^2 \cdot m^2$$

$$125m^6 + 8n^6$$

$$(5m^2 + 2n^2)(25m^4 - 10m^2n^2 + 4n^4)$$

Factor Completely:

$$x^6 = x^2 \cdot x^2 \cdot x^2$$

$$x^6 - 1$$

$$\underline{(x^2 - 1)}(x^4 + x^2 + 1)$$

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

Factor Completely:

$$16x^4 - 40x^2y^2 + 9y^4$$

$$\begin{array}{c} 44 \\ \swarrow \quad \searrow \\ -4 + -36 = -40 \end{array}$$

$$\underline{16x^4 - 4x^2y^2} - 36x^2y^2 + 9y^4$$

$$\underline{4x^2(4x^2 - y^2)} - 9y^2(4x^2 - y^2)$$

$$\underline{(4x^2 - y^2)}(4x^2 - 9y^2)$$

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

Factor Completely:

$$y^{8n} - 2y^{4n} + 1$$

$$\underline{(y^{4n} - 1)} \underline{(y^{4n} - 1)}$$

$$\underline{(y^{2n} + 1)} \underline{(y^{2n} - 1)} \underline{(y^{2n} + 1)} \underline{(y^{2n} - 1)}$$

$$\underline{(y^{2n} + 1)} \underline{(y^n + 1)} \underline{(y^n - 1)} \underline{(y^{2n} + 1)} \underline{(y^n + 1)} \underline{(y^n - 1)}$$

$$(y^{2n} + 1)^2 (y^n + 1)^2 (y^n - 1)^2$$

Solve:

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

$$x^3 - 7x^2 + 12x = 0$$

$$x(x^2 - 7x + 12) = 0$$

$$x(x - 4)(x - 3) = 0$$

$$x = 0, 4, 3$$

$$\begin{array}{c} 12 \\ \swarrow \quad \searrow \\ -4 \quad + \quad -3 = -7 \end{array}$$

$$\begin{array}{l} x = 0 \quad x - 4 = 0 \quad x - 3 = 0 \\ \quad \quad x = 4 \quad \quad x = 3 \end{array}$$

Assignment:

Solve Equations by Factoring

#1-10

* QUIZ Tomorrow! *