

10-3-13
3rd Trig

$$\begin{aligned} \textcircled{17} \quad & (x^3 - 9x) + (x^2 - 9) \\ & x(x^2 - 9) + 1(x^2 - 9) \\ & (x^2 - 9)(x + 1) \\ & \downarrow \\ & (x+3)(x-3)(x+1) \end{aligned}$$

$$\begin{aligned} \textcircled{19} \quad & 5x^2 + 25x + 30 \\ & 5(x^2 + 5x + 6) \\ & 5(x+2)(x+3) \end{aligned}$$

$$\begin{aligned} \textcircled{23} \quad & \frac{n^2 + 7n + 12}{n^2 + 9n + 20} \\ & \frac{(n+3)\cancel{(n+4)}}{\cancel{(n+4)}(n+5)} \end{aligned}$$

$$\frac{n+3}{n+5} \quad [n \neq -4]$$

$$\begin{aligned} \textcircled{31} \quad & x-4 \overline{) x^2 + 5x - 20} \\ & \underline{- x^2 - 4x} \\ & \quad 9x - 20 \\ & \quad \underline{- 9x - 36} \\ & \quad \quad 16 \end{aligned}$$

$$(37) \quad 5x^2 + 21x - 2 = 0$$

$$\begin{aligned} a &= 5 \\ b &= 21 \\ c &= -2 \\ 4ac &= -40 \end{aligned} \quad \begin{aligned} x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ x &= \frac{-21 \pm \sqrt{441 - -40}}{10} \\ x &= \frac{-21 \pm \sqrt{481}}{10} \\ x &= \frac{-21 + \sqrt{481}}{10} \quad \text{or} \quad x = \frac{-21 - \sqrt{481}}{10} \\ x &\approx .093 \quad \quad \quad x \approx -4.293 \end{aligned}$$

$$(40) \quad 1, 4, 9, 16, 25, 36, 49, 64, 81, 100$$

$$\begin{array}{r} 100 \\ - 10 \\ \hline 90 \end{array}$$

$$(41) \quad 2x = y + z \quad y = 10 - z \quad z + x = 7$$

$$\begin{aligned} 2x &= 10 - z + z \\ 2x &= 10 \\ x &= 5, z = 2 \quad y = 8 \end{aligned}$$

$$\frac{y}{z} = \frac{8}{2} = 4$$

$$(42) \quad 5 \times 70 = 350$$

$$\underline{50} + \underline{50} + \underline{50} + \underline{100} + \underline{100} = 350$$

$$(27) \quad \frac{x^2 - 9}{x^3 - 27} = \frac{(x+3)\cancel{(x-3)}}{\cancel{(x-3)}(x^2 + 3x + 9)}$$

$$\frac{x+3}{x^2 + 3x + 9} \quad [x \neq 3]$$

10-3-13
4^o T:ij

$$\textcircled{17} (x^3 - 9x) + (x^2 - 9)$$

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

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

↓

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

$$\textcircled{19} 5x^2 + 25x + 30$$

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

$$5(x+2)(x+3)$$

$$\textcircled{24} \frac{n^2 - 36}{n^2 - 11n + 30}$$

$$\frac{(n+6)\cancel{(n-6)}}{\cancel{(n-6)}(n-5)}$$

$$\frac{n+6}{n-5} [n \neq 6]$$

$$\textcircled{31} x-4 \overline{) x^2 + 5x - 20}$$
$$\begin{array}{r} x + 9 + \frac{16}{x-4} \\ - x^2 - 4x \quad \downarrow \\ \hline 9x - 20 \\ - 9x - 36 \\ \hline 16 \end{array}$$

$$(37) \quad 5x^2 + 21x - 2 = 0$$

$$a = 5$$

$$b = 21$$

$$c = -2$$

$$4ac = -40$$

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$X = \frac{-21 \pm \sqrt{441 - (-40)}}{10}$$

$$X = \frac{-21 \pm \sqrt{481}}{10}$$

$$X = \frac{-21 + \sqrt{481}}{10}$$

$$\text{or } X = \frac{-21 - \sqrt{481}}{10}$$

$$X \approx .093$$

$$X \approx -4.293$$

(40)

1, 4, 9, 16, 25, 36, 49, 64, 81, 100

$$100 - 10 = 90$$

(41)

$$2x = y + z$$

$$y = 10 - z$$

$$z + x = 7$$

$$z + 5 = 7$$

$$2x = 10 - z + z$$

$$y = 10 - 2$$

$$y = 8$$

$$2x = 10$$

$$x = 5$$

$$z = 2$$

$$y = 8$$

$$\frac{y}{z} = \frac{8}{2} = 4$$

(42)

$$\underline{50 + 50 + 50} + \underline{100} + \underline{100} = 350$$