

Turn in homework:

3.5 #27-67 odd

3.6 #31-39 odd; 47, 53-61 odd

3.7 #25-33 odd; 23, 37

Point-Slope Equation:

$$y - y_1 = m(x - x_1)$$

Review: Given the line $2x - 3y = 5$, determine the equations of both a line parallel to and perpendicular to this line which pass through the point $(1, 1)$.

$$-3y = -2x + 5$$

$$y = \left(\frac{2}{3}\right)x - \frac{5}{3}$$

parallel: $m = \frac{2}{3}$

$$y - 1 = \frac{2}{3}(x - 1)$$

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

$$y = \frac{2}{3}x + \frac{1}{3}$$

perpendicular: $m = -\frac{3}{2}$

$$y - 1 = -\frac{3}{2}(x - 1)$$

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

$$y = -\frac{3}{2}x + \frac{5}{2}$$

Factor.

3.3

16. $f(x) = x^4 - 4x^3 - 7x^2 + 34x - 24$

hint: 1 is a zero.

$$\begin{array}{r|rrrrrr} 1 & 1 & -4 & -7 & 34 & -24 \\ & & & 1 & -3 & -10 & 24 \end{array}$$

$$(x-1)(x^3 - 3x^2 - 10x + 24)$$

$$\begin{array}{r|rrrr} 2 & 1 & -3 & -10 & 24 \\ & & 2 & -2 & -24 \end{array}$$

$$(x-1)(x-2)(x^2 - x - 12)$$

$$(x-1)(x-2)(x-4)(x+3)$$

hi
it's yo work
service

48. $f(x) = x^4 + 11x^3 + 41x^2 + 61x + 30$

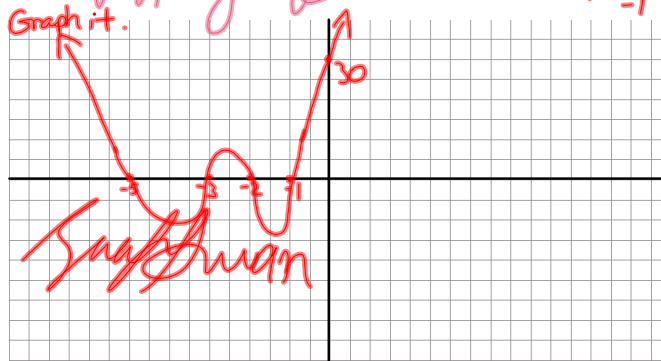
$$\begin{array}{r|rrrrr} -3 & 1 & 11 & 41 & 61 & 30 \\ & & -3 & -24 & -51 & -30 \\ \hline & 1 & 8 & 17 & 10 & 0 \end{array}$$

$f(x) = (x+3)(x^3 + 8x^2 + 17x + 10)$

$$\begin{array}{r|rrrr} -2 & 1 & 8 & 17 & 10 \\ & & -2 & -12 & -10 \\ \hline & 1 & 6 & 5 & 0 \end{array}$$

$f(x) = (x+3)(x+2)(x^2 + 6x + 5)$
 $f(x) = (x+3)(x+2)(x+5)(x+1)$

♥ Mikayla Burns zeros: -3, -2, -5, -1



3.5

63. $f(x) = \frac{x^3 + 2x^2 - 15x}{x^2 - 5x - 14}$

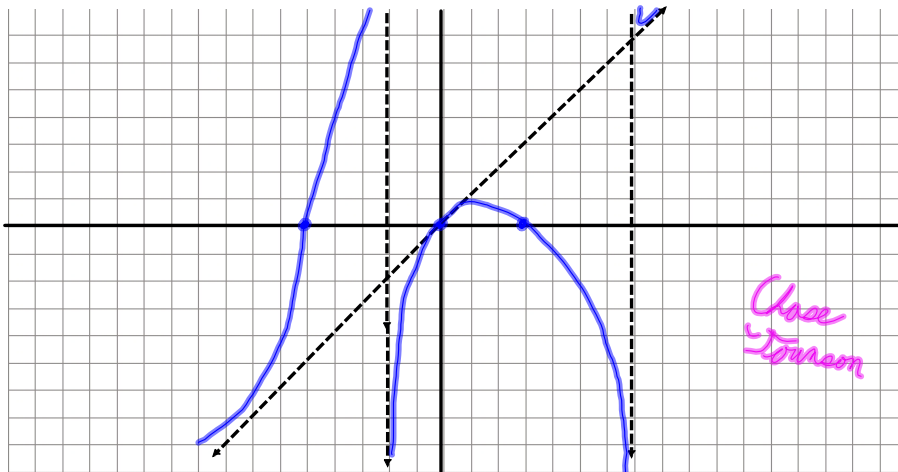
Graph it.

$$\frac{x(x^2 + 2x - 15)(x+5)(x-3)}{(x-7)(x+2)(x-7)(x+2)}$$

Zeros: 0, -5, 3
 V.A.s: x=7, x=-2

x-int.: (0,0)

End behavior: $\frac{x^3}{x^2} = x \Rightarrow y = x$ (slant asymptote)



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Hw:

Old Test #2
(from web)