



Advanced Math

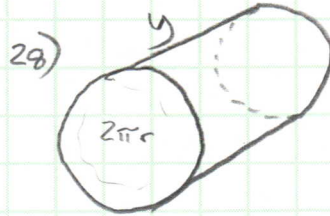
2) Vertex $(4, -4)$
 x-ints $\{2, 6\}$
 y-int $(0, 12)$

4) vertex $(2, -1)$ pg 291
 x-ints: $\frac{12 \pm \sqrt{12}}{6}$
 y-int: $(0, 11)$

6) $F(x) = \frac{1}{3}(x-2)^2 + 3$ 10) max $(2, 7)$

8) min $(-4, -6)$ 12) min $(-\frac{1}{2}, 12)$

14) \$2000



a) $V = l \cdot w \cdot h$
 $V = y \cdot \pi r^2$
 $y + 2\pi r = 216$
 $y = 216 - 2\pi r$
 $V(r) = \pi r^2 (216 - 2\pi r)$
 domain $(0, 34.37)$

16) increasing, increasing

18) decreases, decreases

max volume = 72.1 at radius 22.9 cm

32) $\frac{4}{3} + \frac{29}{3(3x-2)}$

34) $3x^2 + 3 + \frac{3}{x^2-1}$

36) $3x^2 + 5x + 8 + \frac{10}{2x^2-1}$

38) $2x^2 + 3x + \frac{1}{2} + \frac{9}{2(2x-1)}$

40) $.1x^2 + .8x + 4 + \frac{39}{2(x-5)}$

42a) yes

44) $-i\sqrt{2}$

48) $\frac{17+7i}{26}$

50) $x^4 - x^3 - 3x^2 + 17x - 30 = F(x)$

b) yes

c) yes

d) no

46) $9+20i$

52) $\{-2, -\frac{3}{5}, \frac{1}{2}\}$

54) $\{2, -1, 0, 3\}$

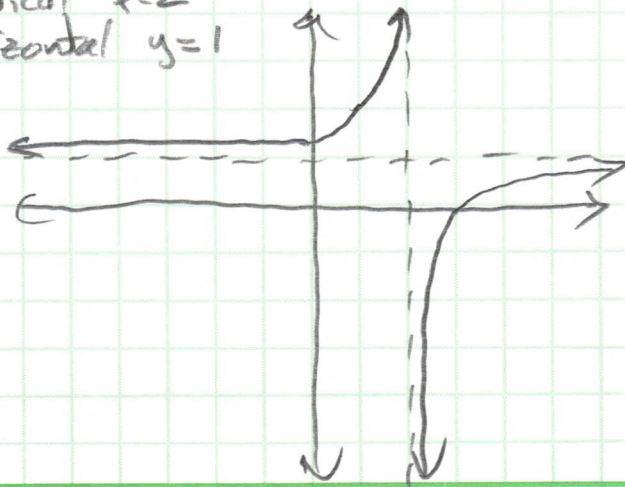
56) $\{\pm 5i, \pm \frac{i}{\sqrt{5}}\}$

58) $x \approx -.44$

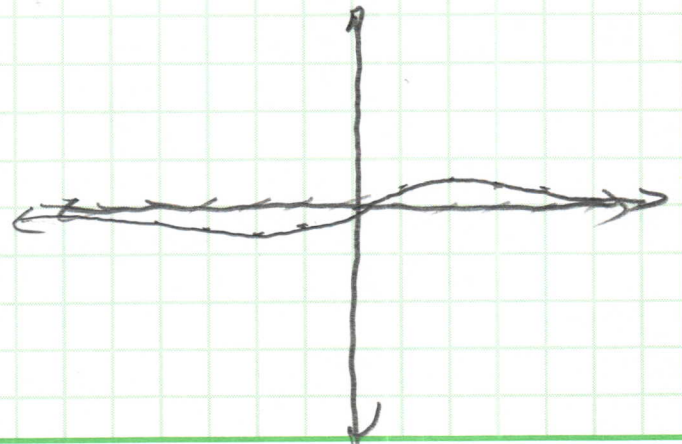
60) $x \approx 1.72$

62) bride 24.8 yrs

64) Domain \mathbb{R} except $\{2\}$
 Vertical $x=2$
 Horizontal $y=1$

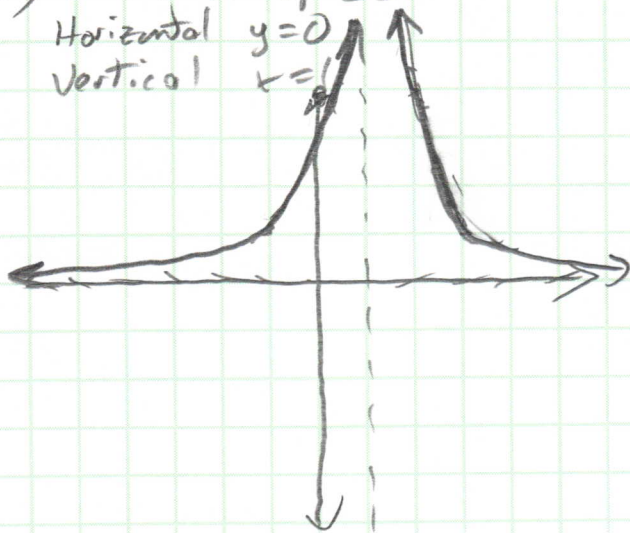


66) Domain \mathbb{R}
 Horizontal $y=0$

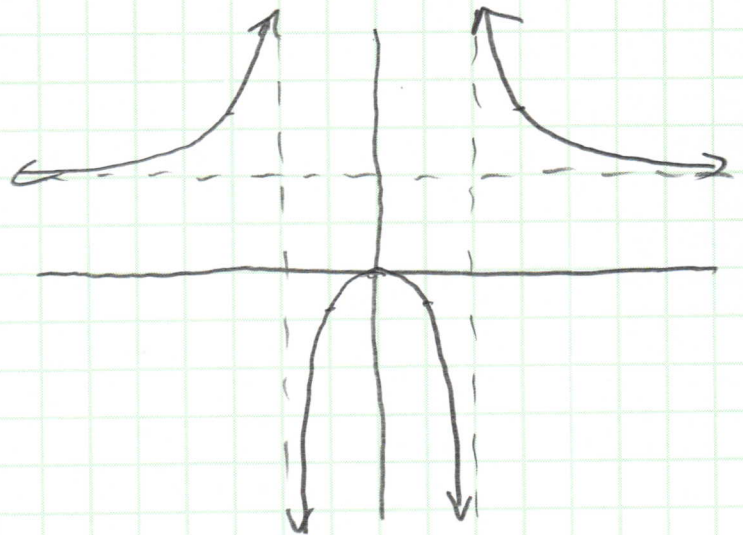




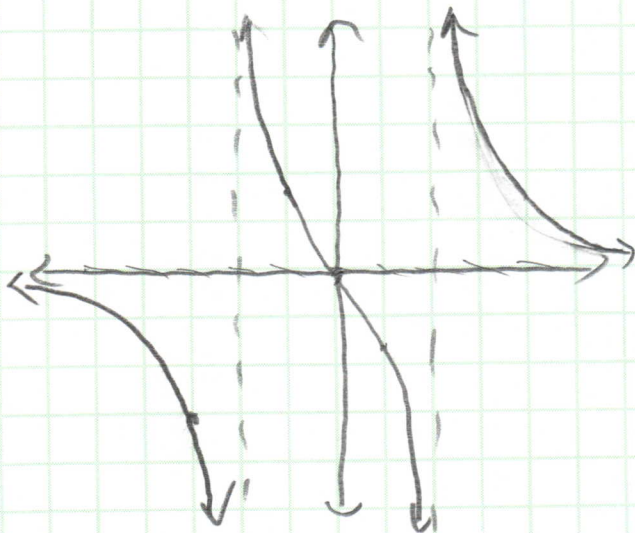
68) Domain: \mathbb{R} except $x=1$
 Horizontal $y=0$
 Vertical $x=1$



70) Domain \mathbb{R} except $x=\pm 2$
 Horizontal $y=2$
 Vertical $x=2, x=-2$



72) Domain \mathbb{R} except $x=\pm 2$
 Vertical $x=2, x=-2$
 Horizontal $x=0$



74) Domain \mathbb{R} except $x=3$
 Vertical $x=3$
 Horizontal $y=2$

