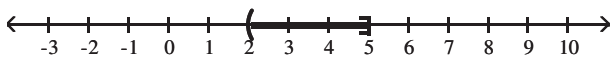
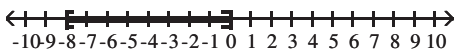
1) {1}
2) $x \neq 0; \left\{-\frac{22}{21}\right\}$
3) ∅
4) {−5}
5) 100 miles
6) $8000 invested at 6%; $2000 invested at 11%
7) 30°, 90°, 60°
8) 7 hours
9) $c = \frac{ab}{a+b}$
10) 32 − 24i
11) $\frac{7}{15} - \frac{16}{15}i$
12) $\left\{-\frac{5}{4}, -\frac{2}{3}\right\}$
13) {3 ± 8i}
14) $\{4 - \sqrt{23}, 4 + \sqrt{23}\}$
15) $\left\{\frac{-3-\sqrt{3}}{2}, \frac{-3+\sqrt{3}}{2}\right\}$
16) -2 ± 2i
17) 15 ft
18) 12 feet by 15 feet
19) $\left\{-\frac{1}{4}, \frac{1}{4}, \frac{5}{3}\right\}$
20) {6}
21) {9}
22) {−2}
23) $\left\{\frac{1}{10}, 1\right\}$
24) {32, −1}
25) $\left\{-\frac{9}{8}, -\frac{3}{8}\right\}$
26) (2, 5]

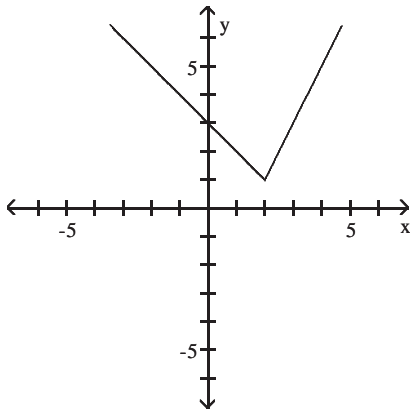


27) [−8, 0]

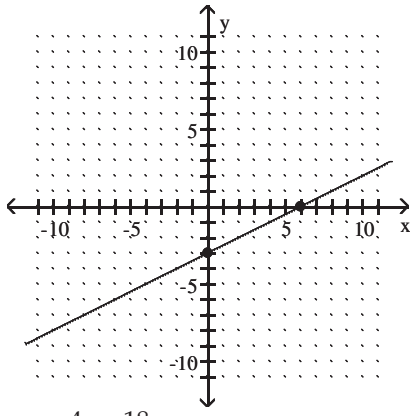


28) $(-\infty, -\frac{4}{7})$ or $(2, \infty)$
29) $3x^2 - 9x + 2$
30) domain: $(-\infty, \infty)$
range: $[-2, \infty)$
31) (6, 0), (−6, 0), (0, −6)
32) −3, 3.5, 5

33) 3
34) (–2, 2)
35) (–3, –2)
36) (–∞, –1) or (3, ∞)
37) f has a relative minimum at x = –2 and 2; the relative minimum is 0
38) Odd
39) Even
40) –19
41) 11
42)

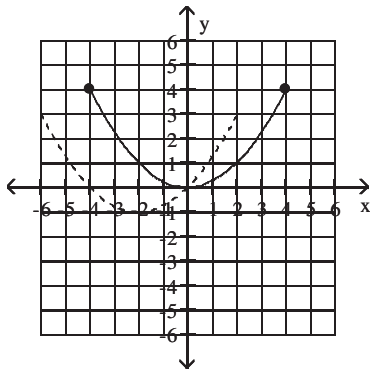


43) Even
44) Odd
45) 2
46) 9(2x+h)
47) y = – 2x – 6
48) intercepts: (0, –3), (6, 0)

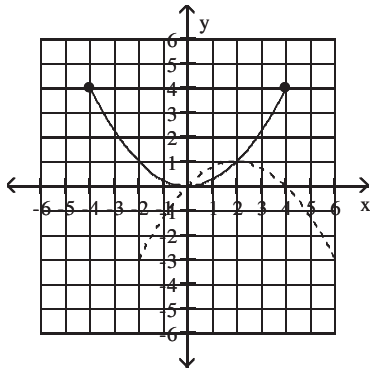


49) y = – 4x + 18
50) $y = -\frac{1}{8}x + \frac{21}{4}$

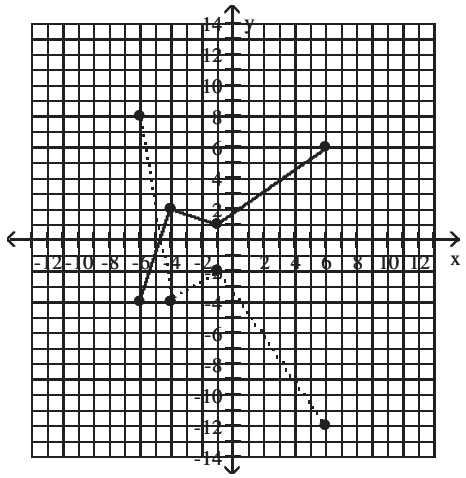
51)



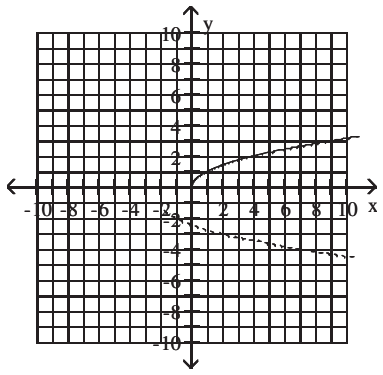
52)



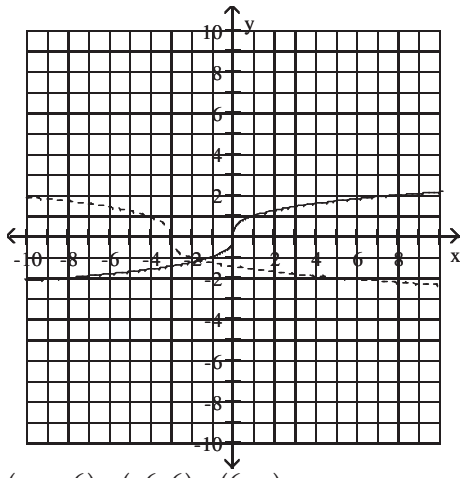
53)



54)



55)



56) $(-\infty, -6) \cup (-6, 6) \cup (6, \infty)$

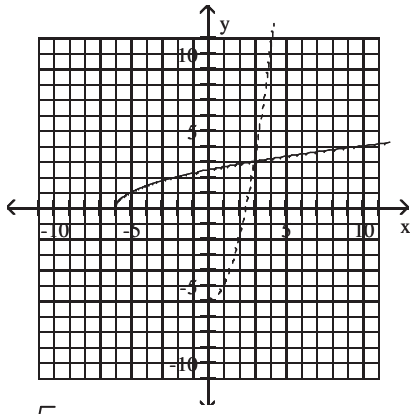
57) $\dfrac{9x^2 - 5x}{x^2 - 2x - 15}$

58) $2\sqrt{2x - 1}$

59) $20x^2 + 25x + 34$

60) $f^{-1}(x) = \sqrt[3]{x} - 6$

61)

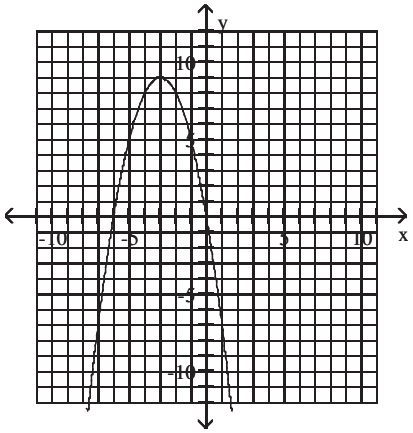


62) $2\sqrt{5}$

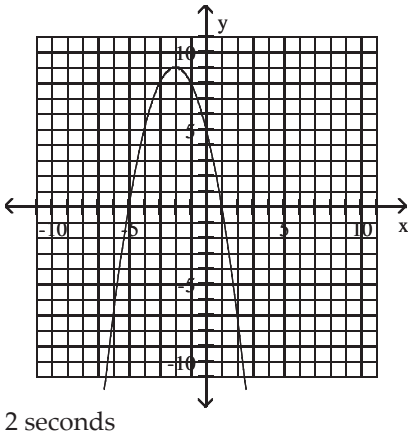
63) $(6, -\frac{5}{2})$

64) $(x + 6)^2 + (y - 1)^2 = 9$
(-6, 1), r = 3

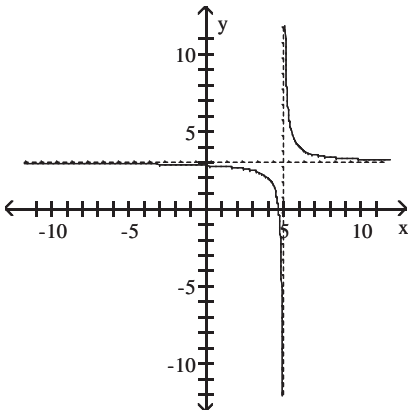
65)



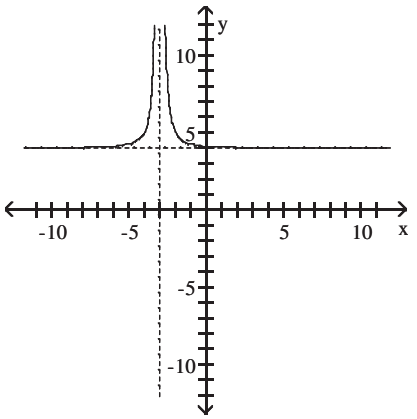
66)



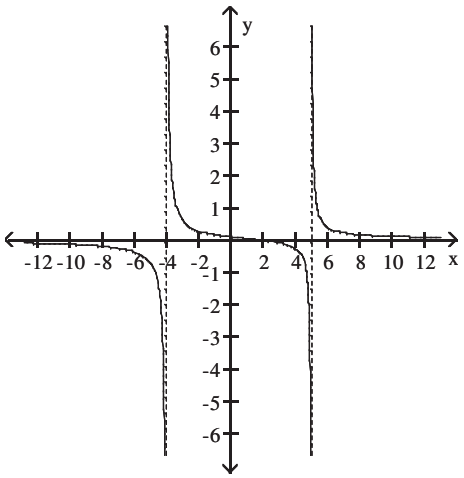
67) 2 seconds
68) 85 ft
69) x = 4
70) x = 6, x = 4
71) y = 0
72) y = 4
73)



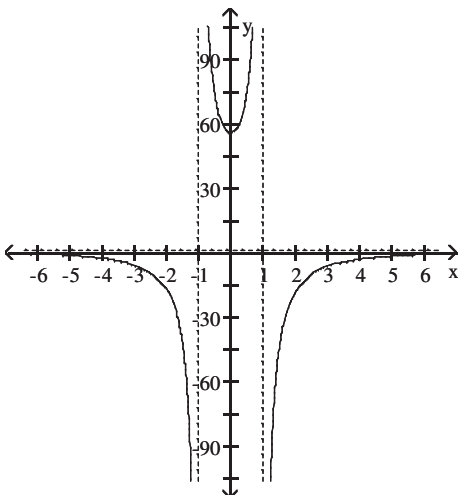
74)



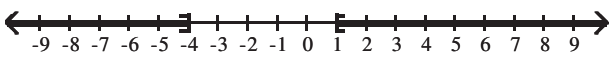
75)



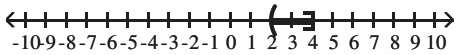
76)



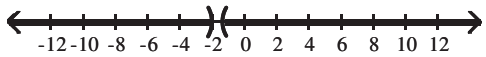
77) $(-\infty, -4] \cup [1, \infty)$



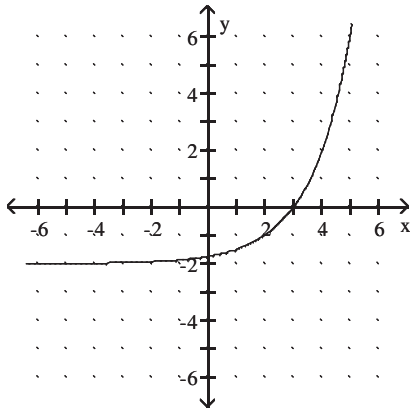
78) (2, 4]



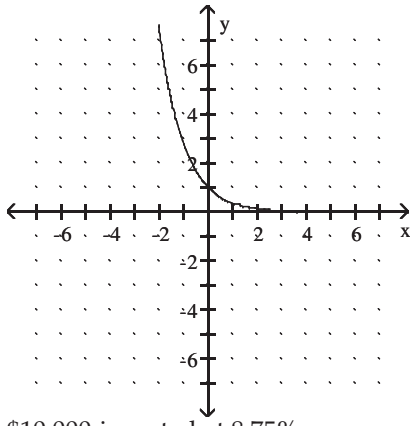
79) $(-\infty, -2)$ or $(-\frac{4}{3}, \infty)$



80)

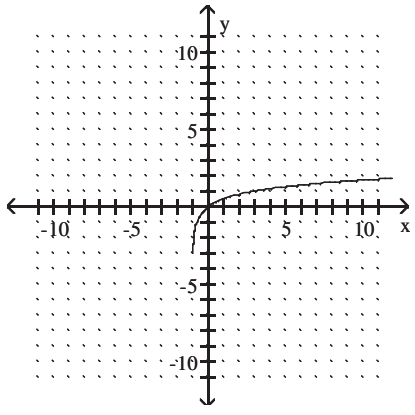


81)

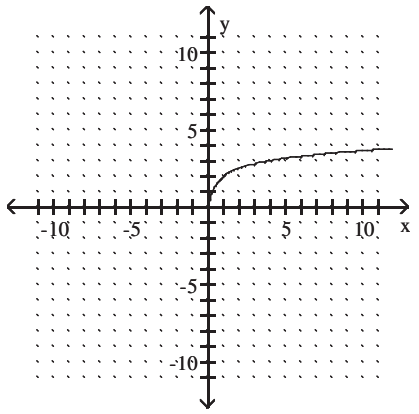


82) $10,000 invested at 8.75% compounded continuously over 6 years yields the greater return.

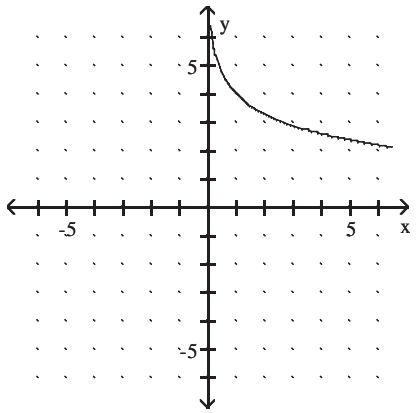
83)



84)



85)



86) $\log_b x + 7\log_b y - 2\log_b z$

87) $\log_4 \dfrac{\sqrt[4]{xy}}{(x+7)^3}$

88) $\left\{\dfrac{\ln 7}{\ln 4} - 8\right\}$

89) 5.12

90) {3}

91) $\left\{e^{8/3}\right\}$

92) {4}

93) 2012

94) 1.71%

95) 3.703 yrs, 3.686 yrs

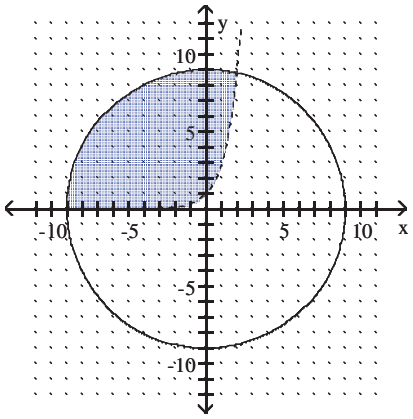
96) {(−4, 2)}

97) $\left\{\left[-\dfrac{1}{3}, 2\right]\right\}$

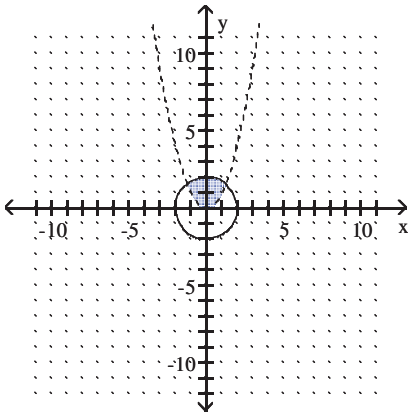
98) 320 senior citizens

99) 10 $10 bills

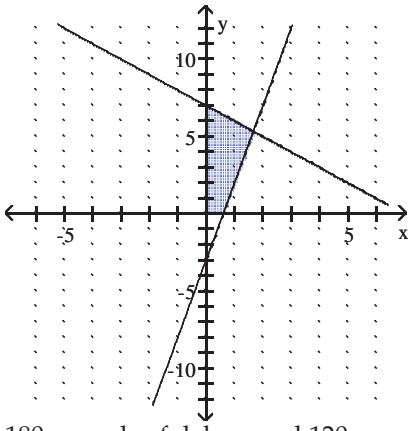
100)



101)



102)



103) 180 pounds of deluxe and 120 pounds of economy