10.2 Exponential Decay

1)

a) $b > 1$

b) $0 < b < 1$

3)

a) (0, 1)

b) (0, 5)

c) (0, 0.4)

d) $(0, \frac{1}{2})$

9)

a) 13 days

b) $y_0 = 1$ kg

c) $b = \frac{1}{2}$

d) The weight decreases by half every 13 days. $k = \frac{1}{13}$

e) $y = (\frac{1}{2})^{\frac{t}{13}}$

11)

a) $y_0 = 100$

b) $b = \frac{1}{5}$

c) $k = \frac{1}{2}$

d) $y = (100)(\frac{1}{5})^{\frac{t}{2}}$

13) $A = (60)(\frac{3}{4})^{\frac{t}{10}}$.

15) Approximately 5.4 years.

17) Approximately 10.3 yrs.

19)

a) $y = \frac{5}{2}x^2$

b) 22.5

c) $x = \pm 5.2$