Problem 1.   Section 1.2 #108

A condominium in an upscale part of the city was purchased for $432,000. In 35 years it is worth $60,500. Find the rate of depreciation.

Rate of depreciation is $\frac{432000-60500}{35} = \boxed{10614.29}$

Problem 2.   Section 1.2 #110

A professor asks her class to report the amount of time t they spent writing two assignments. Most students report that it takes them about 45 minutes to type a four-page assignment and about 1.5 hours to type a nine-page assignment...

a. The linear function is $\boxed{y = \frac{1}{9}t - 1}$

b. $\boxed{13}$ pages can be typed in 2 hours.

c. It takes $\boxed{189}$ minutes to type a 20-page assignment.
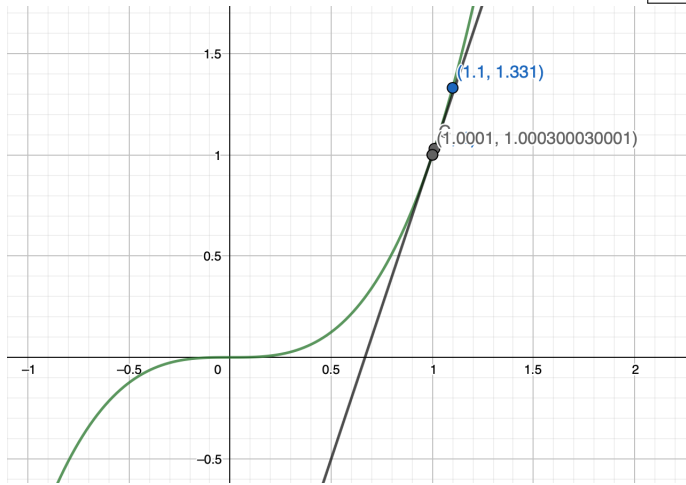
Problem 3.   Section 2.1 #4

Complete the following table with the appropriate values:y-coordinate of Q, the point $Q(x, y)$...

a. $\boxed{1.331}$

b. $\boxed{1.030301}$

c. $\boxed{1.003003001}$

d. $\boxed{1.000300030001}$

e. $\boxed{Q(1.1, 1.331)}$

f. $\boxed{Q(1.01, 1.030301)}$

g. $\boxed{Q(1.001, 1.003003001)}$

h. $\boxed{Q(1.0001, 1.000300030001)}$

i. $\boxed{3.31}$

j. $\boxed{3.0301}$

k. $\boxed{3.0301}$

l. $\boxed{3.00030001}$

Problem 4.   Section 2.1 #6

Use the value in the preceding exercise to find ...
    The equation of the tangent line at point P is $\boxed{y = 3x - 2}$.

Problem 5.   Section 2.1 #8

Use the values in the right column of the table in the preceding exercise to guess the value of the slope of the tanget line to f at $x = 4$.
    The slopt is $\boxed{\frac{1}{4}}$

Problem 6.   Section 1.1 #16

Compute the average velocity of the ball over the given time intervals ...

a. $\boxed{48.951}$

b. $\boxed{-49.049}$

c. $\boxed{48.9951}$

d. $\boxed{49.0049}$

Problem 7.

Consider a stone tossed into the air from ground level with an initial velocity of 20 m/sec. Its height in meters at time t seconds is $h(t) = 20t - 4.9t^2$. Use the the average velocity of the stone over the given time intervals to guess the instantaneous velocity of the stone at $t = 1$ sec.

a. $[1, 1.05]$

b. $[1, 1.01]$

c. $[1, 1.005]$

d. $[1, 1.001]$

The instantaneous velocity of the stone at $t = 1$ is $\boxed{10.2}$