

1) $P = 0.00076x^3 - 0.052x^2 + 1.12x + 77.23$

where P is the price in dollars and x is the year where
x = 0 corresponds to 1970.

a) Graph the average price of Exxon Mobil Stock in a viewing window from 1980 to the present using $Y_{min} = 70$ and $Y_{max} = 100$.

b) How much was Exxon Mobil Stock in the year you were born (to the nearest cent) ?

YEAR = _____ STOCK = _____

c) If the motto of buying stock is “buy low sell high” when in *your lifetime* would have been a good time to buy Exxon Mobil stock?

d) When should you have sold the stock?

2) The cost, C, for supplying a wedding favor to p % of the people attending a wedding is given by:

$$C = \frac{1450p}{100 - p}$$

(a) Use a graphing utility to graph the equation and find all asymptotes.

(b) Find the cost of supplying a wedding favor to 50 % of the people.

(c) Find the cost of supplying a wedding favor to 70 % of the people.

(d) Find the cost of supplying a wedding favor to 90 % of the people.

(e) According to the equation, would it be possible to supply a wedding favor to 100 % of the people? Why or why not.

3) The number N of threatened and endangered wildlife in the US from 2003 to the present can be approximated by the following rational equation:

$$N = \frac{42.58x^2 + 710}{0.03x^2 + 1}$$

Where x represents the year and x = 3 corresponds to 2003.

(a) Graph the function displaying the number of endangered and threatened wildlife from 2003 to the present.

(b) Use the model to predict the number of endangered and threatened species in 2012.

(c) Can this model be used to estimate the number of threatened and endangered species in the future? Why or why not?