This quiz is worth 20 points. Each problem is worth 4 points. You MUST show work to receive any credit.

Solve the problem.

1) A toilet manufacturer has decided to come out with a new and improved toilet. The fixed cost for   1) _____
the production of this new toilet line is $16,600 and the variable costs are $63 per toilet. The
company expects to sell the toilets for $156. Formulate a function C(x) for the total cost of
producing x new toilets and a function R(x) for the total revenue generated from the sales of x
toilets.

   A) C(x) = 16600 + 63x; R(x) = 156x   B) C(x) = 16,663; R(x) = 156

   C) C(x) = 63x; R(x) = 156x   D) C(x) = 16600 + 156x; R(x) = 63x

2) The distance a frog can jump can be estimated from the length of its back legs. The relationship is a   2) _____
linear function D(x) = 11.81x + 1.08, where D(x) is the distance jumped in inches and x is the length
of the frog's hind legs in inches. Estimate how far a frog with 2.7 inch hind legs can jump.

   A) 15.59 inches   B) 32.97 inches   C) 14.51 inches   D) 12.89 inches

Find an equation of the line containing the pair of points.

3) (3, 1) and (–8, 6)   3) _____

   A) $y = -\dfrac{2}{11}x + \dfrac{26}{11}$ B) $y = -\dfrac{5}{11}x + \dfrac{26}{11}$ C) $y = \dfrac{5}{11}x + \dfrac{26}{11}$ D) $y = \dfrac{2}{11}x + \dfrac{26}{11}$

Find the slope and the y–intercept of the line.

4) $2x + 2y + 4 = 0$

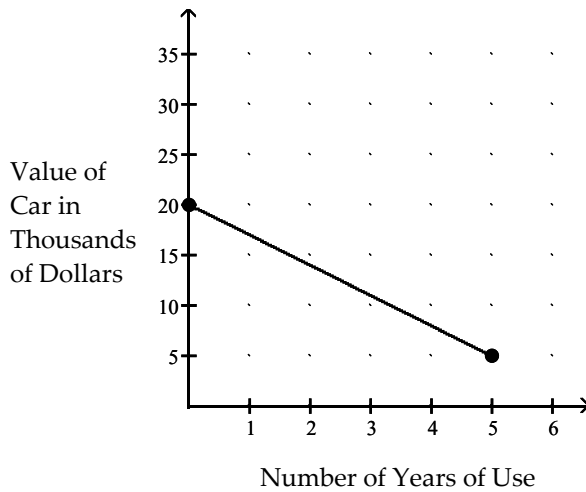A) m = 1, y–intercept: (0, 4)

B) m = –1, y–intercept: $\left(0, -2\right)$

C) m = –1, y–intercept: (0, –4)

D) m = 1, y–intercept: $\left(0, 2\right)$

Use the graph to find the average rate of change.

5)

Number of Years of Use

A) $4000.00 per year

B) –$4000.00 per year

C) $3000.00 per year

D) –$3000.00 per year