Some Questions from Khan Academy

Calculator OK

1. $p(x) = (x-0.95)(500-100x)$

   The equation above models p, the daily profit, in dollars, a food truck makes by selling their signature tacos at a price of x dollars each. What is the daily profit if the tacos are sold at \$3 each?

   A) \$410

   B) \$600

   C) \$820

   D) \$2,460

2. $P(t) = 30(2)^{(t/18)}$

   The function above models P, the amount of bacteria, in colony-forming units, in a bacteria culture after t minutes of growth. How many colony-forming units of bacteria are in the bacteria culture after 90 minutes?

   A) 3×10^2

   B) 9.6×10^2

   C) 5.4×10^3

   D) 2.43×10^7

3. $f(x) = 0.145x^2$

The function above models f, the kinetic energy, in joules, of a baseball traveling at a speed of x meters per second. Based on the function, what is the kinetic energy, in joules, of a baseball traveling at a speed of 40 meters per second?

A) 5.8

B) 58

C) 232

D) 2,320

4. $h(t) = 56 - 4.9t^2$

The function above models h, the height of a flower pot in meters, t seconds after it falls from a fourth floor balcony. What is the height of the flower pot, in meters, 3 seconds after it falls?

A) 51.1

B) 44.1

C) 36.4

D) 11.9

5. Poultry should be cooked to a temperature of 75° C. A chicken is removed from the oven and left to rest in a room that is at a constant temperature of 22° C. The temperature of the chicken t hours after it is removed from the oven is given by the exponential function:

   $T(t) = 22 + 53(0.74)^t$

   What is the approximate temperature of the chicken after 2 hours?

   A) 22° C

   B) 51° C

   C) 74° C

   D) 75° C