

*Some Questions From Khan Academy

NO Calculator

1. $P=0.7c$

A store is having a sale on every item purchased. Irina decides to take advantage of the sale and purchases a sweater. The equation that gives the after-sale price, P , or Irina's sweater with an original cost, c , is shown above. What percent of the original cost did Irina save?

- A) 3%
- B) 7%
- C) 30%
- D) 70%

2. $L=1.1J$

Jacob and Liam purchased the same camera from two different stores that charged different amounts. The equation above gives the price that Liam, L , paid compared to the amount Jacob, J paid. What does the 1.1 mean in the equation?

- A) Jacob paid 10% more than Liam paid
- B) Liam paid 10% more than Jacob paid
- C) Jacob paid \$1.10 more than Liam paid
- D) Liam paid \$1.10 more than Jacob paid

3. Anthropologists can predict the height of a human based on the length of their femur. The relationship between the human's height in centimeters, H , and length of the femur in centimeters, f , can be modeled by the equation below:

$$H = 2.72f + 42.12$$

One anthropologist found the femurs of two different people. One femur measured 22 centimeters and the other femur measured 23 centimeters. What is the difference in their heights?

- A) 1 centimeter
- B) 2.72 centimeters
- C) 27.2 centimeters
- D) 42.12 centimeters

4. (Free Response)

$$T = 0.125(I - 8225)$$

The amount of tax, T , in dollars to be paid by an individual with an income of I between 8,225 and 34,500 dollars is given the equation above. Tax is paid from the portion of income above 8,225 dollars and the remaining amount becomes a part of disposable income. What percentage of income above 8,225 dollars remains after paying tax for an individual whose income falls within the specified range?

(Ignore the % symbol when entering your answer. For example, if the answer is 4.2%, enter 4.2)

5. (Free Response)

$$C = 1.25S$$

A factory determines that the mass of a chocolate-dipped strawberry in grams, C , is related to the mass of an undipped strawberry in grams, S , as shown in the equation above. For a chocolate-dipped strawberry, what percent of its mass is chocolate?

(Ignore the % symbol when entering your answer. For example, if the answer is 4.2%, enter 4.2)

Calculator OK

6. $B = 0.55A$

Jing is making homemade peanut butter. The equation above shows the amount of peanut butter yielded, B , in cups, for A cups of peanuts. What percentage of the volume of peanuts is lost when processing them into peanut butter?

- A) 0.55%
- B) 0.45%
- C) 55%
- D) 45%

7. $M = 8(4.5 - C)$

The magnetic field, M , in microtesla, at the center of a loop with a current of C milliamps clockwise is given by the equation above. By how many microteslas does the magnetic field change for a 1 milliamp increase in the current?

- A) -8
- B) -4.5
- C) 28
- D) 36

8. $h = 11.2 - 0.125d$

The ceiling height, h , in feet, for a particular room in a house a distance of d feet from the west wall is given by the equation above. In order for the ceiling height to decrease by 1 foot, how much does the distance from the west wall change in feet?

- A) 0.125
- B) 8
- C) 11.2
- D) 89.6

9. (Free Response)

$$C = 0.25(L - 1200)$$

The cost, C , in dollars, to the holder of a liability insurance account given a total liability of L dollars is given by the equation above as long as C is positive. By how many dollars does the liability increase when the cost to the holder increases by 1 dollar?

10. (Free Response)

$$V = -2.6 + d/3$$

The electric potential, V , in volts, between two metal plates a distance of d millimeters from the left plate is given by the equation above when $0 \leq d \leq 15$. By how many millimeters does the distance from the left plate increase for the potential to increase by 1 volt?