

*Some Questions from Khan Academy

Non Calculator

1. A meteorologist estimates that on a sunny day, the air temperature decreases by about 4 F degrees for every 1,000 feet (ft) of elevation gain. On a certain day, the air temperature outside an airplane flying above Seattle is -58 F degrees and the ground level temperature in Seattle is 70 F degrees. If x is the height above Seattle, in feet, at which the plane is flying, which of the following best models the situation?

A) $70 = -(4/1000)x - 58$

B) $70 = (4/1000)x - 58$

C) $-58 = -4x + 70$

D) $-58 = 4x + 70$

2. A barber offers two options at his barbershop: a \$15.00 regular haircut and a \$20.00 deluxe haircut. On a certain day, the barber gave r regular haircuts and 3 fewer deluxe haircuts than regular haircuts. He earned \$500.00 total from the two types of haircuts.

Which of the following equations best models this situation?

A) $15.00r + 20.00(r - 3) = 500.00$

B) $15.00r + 20.00(r + 3) = 500.00$

C) $15.00(r - 3) + 20.00r = 500.00$

D) $15.00(r + 3) + 20.00r = 500.00$

3. Oliver mows lawns in his neighborhood. He charges \$10 for each regular yard he mows, and he charges an extra \$5 for each large yard that he mows. In one week he mowed 6 more large yards than regular yards and made \$265. If r represents the number of regular yards that Oliver mowed, which equation best models the situation?

A) $10(r + 6) + 15r = 265$

B) $10(r + 6) + 5r = 265$

C) $10r + 15(r + 6) = 265$

D) $10r + 5(r + 6) = 265$

4. Alma and Erika work part time stocking shelves at a grocery store. At 7:00 a.m. on Saturday, Alma begins unpacking boxes at a rate of 1 box every 6 minutes. Erika joins her at 7:45 a.m. and unpacks 1 box every 5 minutes. When finished with this task, a total of 24 boxes have been unpacked since 7:00 a.m. If x represents the number of minutes for which Alma has been working, which of the following equations best models the situation?

A) $\frac{1}{6}x + \frac{1}{5}(x - 45) = 24$

B) $\frac{1}{6}x + \frac{1}{5}(x - \frac{3}{4}) = 24$

C) $6x + 5(x - 45) = 24$

D) $6x + 5(x - \frac{3}{4}) = 24$

5. Cecilia rents a moving truck that uses a gallon of gas every 10 miles for \$29.95 per day. She incurs an additional charge of \$0.89 for each mile traveled and must return the truck with the same amount of gas in the tank as when she rented it. Cecilia travels x miles and replaces the gas she used with gas that costs \$2.25 per gallon. She returns the moving truck on the same day, and calculates that she spent a total of \$65.63 on gas and rental fees. Which of the following equations best models the situation?

- A) $29.95 + 0.89x = 65.63$
- B) $29.95 + 0.89x + 2.25x = 65.63$
- C) $29.95 + 0.89x + 2.25(x/10) = 65.63$
- D) $29.95 + 0.89x + 2.25(10x) = 65.63$

Calculator

Multiple Choice

1. An unloaded semi-truck, with the driver aboard, weighs 30,000 pounds. When fully loaded, the semi-truck holds 26 pallets of cargo, and each of the 18 tires of the fully loaded semi-truck bears approximately 3,330 pounds. What is the approximate average weight of one pallet of cargo?
- A) 1,131 pounds
- B) 1,280 pounds
- C) 1,633 pounds
- D) 1,665 pounds

Free Response

2. An airplane begins its descent to land from a height of 35,000 feet above sea level. The airplane's height changes by about -4000 feet every 3 minutes. Rounded to the nearest minute, is approximately how many minutes will the plane land? Assume that the airport runway is at sea level.
3. A basketball game was scheduled to last 60 minutes, including the breaks between quarters. Several timeouts were used throughout the game, resulting in the game lasting a total of 72 minutes, including breaks. If each timeout was 90 seconds, how many total timeouts were used during the game?
4. Sasha has \$2.65 in change in her pocket. The \$2.65 is made up of one quarter plus an equal number of nickels and dimes. How many tickets does Sasha have in her pocket?