

Interpreting linear functions



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$$1. T = 0.25q + 87$$

Manon's statistics professor puts a bonus question on every test, which adds **0.25** points to a student's overall grade at the end of the term. The above equation gives Manon's current overall grade, **T** , after taking into account **q** extra credit questions answered correctly. What does the **87** mean in this equation?

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- A. Manon must get an **87** or above to pass.
- B. Manon's average is an **87** before adding the extra credit.
- C. After adding in her extra credit, Manon's average is an **87**.
- D. Manon's professor gave **87** opportunities for extra credit this term.

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$$2.T=10m+40$$

Tim decides to cook a steak. The interior temperature, T , of the steak, in degrees Fahrenheit($^{\circ}F$), after cooking for m minutes is given in the equation above. What does the 10 mean in the equation?

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- A. The interior temperature is **10 °F** when Tim starts cooking the steak.
- B. The interior temperature of the steak increases by 10°F for every minute it is cooked.
- C. The interior temperature of the steak decreases by 10°F for every minute it is cooked.
- D. The interior temperature of the steak will increase a total of 10°F while being cooked.

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3.If Vera starts with a full tank of gas, the number of gallons of gas, g , left in the tank after driving m mile is given by the equation above. When full, how many gallons of gas does Vera' s tank hold?

- A. 15 gallons
- B. 17 gallons
- C. 30 gallons
- D. 32 gallons

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4. Officials project that between **2010** and **2050**, the Sub-Saharan African population will drastically change. The model below gives the projection of the population, P , in thousands, with respect to time, t (provided that **2010** is when $t = 0$).

$$P = 175 + \frac{11}{2}t$$

What does the **175** mean in the equation?

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- A. In 2010, the population of Sub-Saharan African was 175 thousand.
- B. In 2050, the population of Sub-Saharan African will be 175 thousand.
- C. Between 2010 and 2050, the population of Sub-Saharan African will increase by 175 thousand.
- D. Between 2010 and 2050, the population of Sub-Saharan African will decrease by 175 thousand.

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5. An artist is carving chess pieces from a large piece of marble. After carving p chess pieces, there are S pounds of uncarved marble left. As the number of chess pieces carved increases, what happens to the weight of the uncarved marble?

- A. There are 125 pounds left.
- B. There are 537.5 pounds left.
- C. The weight decreases.
- D. The weight increases.

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$$6. W = -\frac{1}{2}m + 16$$

Henry's water bottle is leaking at a constant rate. The amount of water, W , in ounces, that is left in the water bottle after leaking for m minutes is given by the equation above. What does the $-\frac{1}{2}$ mean in the equation?

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- A. The water bottle loses 2 ounces of water per minute.
- B. The water bottle loses $\frac{1}{2}$ an ounces of water per minute.
- C. The water bottle has $\frac{1}{2}$ an ounces of water in it at the start.
- D. $\frac{1}{2}$ of the water has leaked from the water bottle in one minte.

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$$7.P = 23 + 10(h - 1)$$

People start waiting in the line for the release of the newest cell phone at 5 a.m. The equation below gives the number of people, P , in line between the hours, h , of 6 a.m. and 11 a.m., when the doors open. Assume that 6 a.m. is when time $h = 1$. What does the 23 mean in the equation above?

- A. There are 23 people in line at 6 a.m.
- B. After 10 hours, a total of 23 people will be in line.
- C. Every hour between 5 a.m. and 11 a.m., 23 more people get in line.
- D. Every hour between 6 a.m. and 11 a.m., 23 more people get in line.

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$$8.C = 1.5b + 67.5$$

The total cost, C , in dollars, to produce b books is given by the equation below. What is the meaning of 1.5 in the equation?

- A. 1.5 books will cost \$67.50 to produce.
- B. It costs an extra \$1.50 for each book produced.
- C. If you produce one book, you total cost will be \$1.50
- D. There is a flat fee of \$1.50 to produce any number of books.

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$$9.B = 0.55A$$

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%

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$$10.16B + 3.5W = 22$$

Antoine bikes part of the way on a 22 mile trail and walks the rest of the way. If he spends B hours biking and W hours walking, the trip is modeled by the equation shown above. What is the meaning of the $16B$ in the equation?

- A. Antoine travels a total of $16B$ miles.
- B. Antoine bikes for a total of $16B$ miles.
- C. Antoine bikes for $16B$ miles before starting his walk.
- D. Antoine rides his bike at an average speed of $16B$ mile per hour.

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Thanks

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