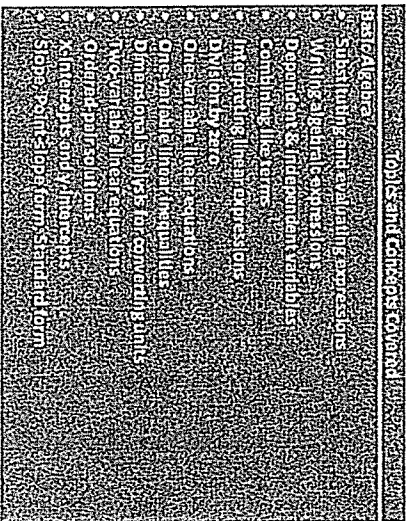


Something to consider:

Monday

Tuesday

### Heart of Algebra



Salim wants to purchase tickets from a vendor to watch a tennis match. The vendor charges a one-time service fee for processing the purchase of the tickets. The equation  $T = 15n + 12$  represents the total amount  $T$ , in dollars, Salim will pay for  $n$  tickets. What does 12 represent in the equation?

- A) The price of one ticket, in dollars
- B) The amount of the service fee, in dollars
- C) The total amount, in dollars, Salim will pay for one ticket
- D) The total amount, in dollars, Salim will pay for any number of tickets

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where  $x$  is the number of pounds of Fertilizer A and  $y$  is the number of pounds of Fertilizer B?

- A)  $0.4x + 0.6y = 240$
- B)  $0.6x + 0.4y = 240$
- C)  $40x + 60y = 240$
- D)  $60x + 40y = 240$

Ken and Paul each ordered a sandwich at a restaurant. The price of Ken's sandwich was  $x$  dollars, and the price of Paul's sandwich was \$1 more than the price of Ken's sandwich. If Ken and Paul split the cost of the sandwiches evenly and each paid a 20% tip, which of the following expressions represents the amount, in dollars, each of them paid? (Assume there is no sales tax.)

- A)  $0.2x + 0.2$
- B)  $0.5x + 0.1$
- C)  $1.2x + 0.6$
- D)  $2.4x + 1.2$

$$x + y = 75$$

The equation above relates the number of minutes,  $x$ , Maria spends running each day and the number of minutes,  $y$ , she spends biking each day. In the equation, what does the number 75 represent?

- A) The number of minutes spent running each day
- B) The number of minutes spent biking each day
- C) The total number of minutes spent running and biking each day
- D) The number of minutes spent biking for each minute spent running

Defend one of your answers with someone who thought differently.

Practice makes ~~perfect~~ **PERMANENT**

Wednesday

If  $3r = 18$ , what is the value of  $6r + 3$ ?

- A) 6
- B) 27
- C) 36
- D) 39

The number of states that joined the United States between 1776 and 1849 is twice the number of states that joined between 1850 and 1900. If 30 states joined the United States between 1776 and 1849 and  $x$  states joined between 1850 and 1900, which of the following equations is true?

- A)  $30x = 2$
- B)  $2x = 30$
- C)  $\frac{x}{2} = 30$
- D)  $x + 30 = 2$

Show another way to solve one of these problems.

Thursday

Kathy is a repair technician for a phone company.

Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation  $P = 108 - 23d$ , where  $P$  is the number of phones left and  $d$  is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

- A) Kathy will complete the repairs within 108 days.
- B) Kathy starts each week with 108 phones to fix.
- C) Kathy repairs phones at a rate of 108 per hour.
- D) Kathy repairs phones at a rate of 108 per day.

Alan drives an average of 100 miles each week. His car can travel an average of 25 miles per gallon of gasoline. Alan would like to reduce his weekly expenditure on gasoline by \$5. Assuming gasoline costs \$4 per gallon, which equation can Alan use to determine how many fewer average miles,  $m$ , he should drive each week?

- A)  $\frac{25}{4}m = 95$
- B)  $\frac{25}{4}m = 5$
- C)  $\frac{4}{25}m = 95$
- D)  $\frac{4}{25}m = 5$

Friday

$$C = \frac{5}{9}(F - 32)$$

The equation above shows how a temperature  $F$ , measured in degrees Fahrenheit, relates to a temperature  $C$ , measured in degrees Celsius. Based on the equation, which of the following must be true?

- I. A temperature increase of 1 degree Fahrenheit is equivalent to a temperature increase of  $\frac{5}{9}$  degree Celsius.
  - II. A temperature increase of 1 degree Celsius is equivalent to a temperature increase of 1.8 degrees Fahrenheit.
  - III. A temperature increase of  $\frac{5}{9}$  degree Fahrenheit is equivalent to a temperature increase of 1 degree Celsius.
- A) I only
  - B) II only
  - C) III only
  - D) I and II only

At a restaurant,  $n$  cups of tea are made by adding  $t$  tea bags to hot water. If  $t = n + 2$ , how many additional tea bags are needed to make each additional cup of tea?

- A) None
- B) One
- C) Two
- D) Three