

Directions: Please choose the best answer choice for each of the following questions.

1. In a local high school, the ratio of freshmen to sophomores is 28 to 24 . There are 348 sophomores. Use the proportion $\frac{28}{24} = \frac{x}{348}$. How many freshmen are at the high school?
- A. 308 freshmen
 B. 406 freshmen
 C. 520 freshmen
 D. 672 freshmen

Answer Choice Rationale

- This is less than the number of sophomores, but
- A. the ratio shows that there are more freshmen than sophomores in the school.
 B. Correct answer
 C. This would be correct if the ratio of freshmen to sophomores were 130 to 87.
 D. This would be correct if the ratio of freshmen to sophomores were 168 to 87.

ItemID A2K.1090217
 Correct B
 Standard(s) MA.9-12.MA.912.A.5.4

2. Solve for x .

$$\frac{6}{(x + 3)} = \frac{x}{9}$$

- A. $x = -6$ or $x = -9$
 B. $x = -6$ or $x = 9$
 C. $x = 6$ or $x = -9$
 D. $x = 6$ or $x = 9$

Answer Choice Rationale

- This answer cross-multiplies to find the equation
- A. $x^2 + 3x - 54 = 0$, but then factors the equation to $(x + 6)(x + 9)$ instead of $(x - 6)(x + 9)$.
 This answer cross-multiplies to find the equation
 B. $x^2 + 3x - 54 = 0$, but then factors the equation to $(x + 6)(x - 9)$ instead of $(x - 6)(x + 9)$.
 C. Correct answer.

- This answer cross-multiplies to find the equation
- D. $x^2 + 3x - 54 = 0$, but then factors the equation to $(x - 6)(x - 9)$ instead of $(x - 6)(x + 9)$.

ItemID A2K.1090052
 Correct C
 Standard(s) MA.9-12.MA.912.A.5.4

3. Angelica wanted to measure the height of the flagpole in front of her school. She measured its shadow to be 30 feet long. At the same time, her shadow was 4 feet 6 inches long. Angelica is 5 feet tall. What is the height of the flagpole?
- A. 33 feet 4 inches
 B. 30 feet 6 inches
 C. 29 feet 6 inches
 D. 27 feet

Answer Choice Rationale

- A. Correct answer
 B. The student used the correct proportion but “cross-adds.”
 C. This makes the difference between shadow and heights constant.
 D. The student used an incorrect proportion.

ItemID A2K.1063940
 Correct A
 Standard(s) MA.9-12.MA.912.A.5.4

4. At a high school football game, there are 18 fans of the home team for every 4 fans of the visiting team. If there are 405 home team fans at the game, how many visiting fans are at the game?
- A. 6 fans
 B. 74 fans
 C. 90 fans
 D. 1,823 fans

Answer Choice Rationale

- A. No rationale available
 B. No rationale available
 C. Correct

Go on to the next page »

D. No rationale available

ItemID A2K.1090210
Correct C
Standard(s) MA.9-12.MA.912.A.5.4

5. The length to height ratio of a rectangular window is 5 inches to 4 inches. What is the height of this window if the length is 40 inches?

- A. 64 inches
- B. 32 inches
- C. 16 inches
- D. 24 inches

Answer Choice Rationale

- A. No rationale available
- B. Correct
- C. No rationale available
- D. No rationale available

ItemID saltsmad.2841
Correct B
Standard(s) MA.9-12.MA.912.A.5.4

Stop! You have finished this exam.