

P.I. A.N.5: Solve algebraic problems arising from situations that involve fractions, decimals and percents (decrease/increase and discount), and proportionality/direct variation

1. Which group contains ratios that are all equivalent to $\frac{3}{5}$?

[A] $\frac{6}{10}, \frac{9}{15}, \frac{12}{20}$ [B] $\frac{4}{5}, \frac{8}{10}, \frac{12}{15}$

[C] $\frac{4}{5}, \frac{5}{5}, \frac{6}{5}$ [D] $\frac{3}{6}, \frac{3}{7}, \frac{3}{8}$

2. Which of the following pairs of ratios does NOT form a proportion?

[A] $\frac{2}{7}, \frac{8}{28}$ [B] $\frac{36}{30}, \frac{7}{6}$

[C] $\frac{27}{9}, \frac{12}{4}$ [D] $\frac{52}{13}, \frac{4}{1}$

3. Find n in this proportion and give another ratio that equals $\frac{12}{13} : \frac{12}{13} = \frac{42}{n}$.

4. Write three equal ratios for the ratio 2 : 14.

5. The Spring Valley Flyers had a record of 45 wins and 35 losses. What was the ratio of wins to losses?

[A] 7 to 9 [B] 4 to 5
[C] 5 to 4 [D] 9 to 7

6. A history class consists of 11 boys and 13 girls. Find the ratio of girls to the entire class.

[A] $\frac{11}{13}$ [B] $\frac{13}{11}$ [C] $\frac{13}{24}$ [D] $\frac{11}{24}$

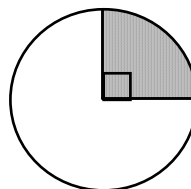
7. Emma studies dance 3 days a week and practices soccer 5 days a week. Which ratio equals the number of dance days to soccer days over a 3-week period?

[A] 9:15 [B] 12:15
[C] 6:15 [D] 15:15

8. The ratio for mixing plant food, weed killer in ounces, and water to make fertilizer is 5 : 4 : 8. If 2 gallons of water are used, how much weed killer is needed?

9. A bowl contains green, red, and white marbles in the ratio 6 : 3 : 2. Based on this information, what does the ratio 5 : 11 represent?

10. A student reported that the amount of shaded area in the figure below is one-third of the circle. Is this true? What ratio did the student use to get his answer?



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[1] A

[2] B

[3] $n = 45.5; \frac{24}{26}$

[4] Answers may include 1 : 7, 3 : 21, 4 : 28, etc.

[5] D

[6] C

[7] A

[8] 128 ounces or 1 gallon

[9] 5 : 11 shows the number of marbles that are not green compared to the total number of marbles in the bowl.

[10] False. The ratio is one-fourth. The student compared the shaded area and nonshaded area to get one-third. He should have compared shaded area to total area.