5th Grade Chapter 11 – Ratio, Proportion, and Percent

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.
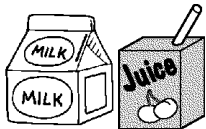
1. Which ratios are equal?

    A. $\dfrac{11}{31}$ and $31 : 11$

    B. $8 : 16$ and $\dfrac{1}{3}$

    C. $\dfrac{20}{11}$ and 40 to 22

    D. 13 to 9 and $18 : 26$

2. In Mr. Hernandez's class, the ratio of students who prefer milk to students who prefer juice is $10 : 15$. Which ratio is equal to $10 : 15$?

    A. $\dfrac{3}{5}$ **B.** $\dfrac{3}{2}$ **C.** $\dfrac{2}{3}$ **D.** $\dfrac{2}{5}$

3. A fifth-grade class has 21 students. There are 10 boys. Which of the following is the ratio of girls to boys in the class?
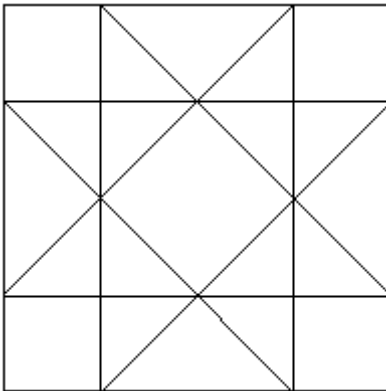
    A. 11 to 10   **C.** 10 to 21

    B. 10 to 11   **D.** 11 to 21

4. What is the ratio of squares to triangles in the quilt block "Evening Star" shown below?
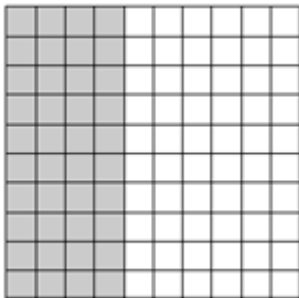

    A. $4 : 12$ **C.** $4 : 16$

    B. $5 : 12$ **D.** $5 : 16$

5. The ratio of slides to pools at a water park is $\dfrac{10}{3}$. There are 13 slides and pools altogether. Which of the

following statements is NOT true?
   A. The water park has 3 pools.

   B. The ratio of pools to slides at the water park is $\dfrac{3}{10}$.

   C. The water park has 10 slides.
   D. The water park has 3 slides.

6. Which ratio is the simplest form of the ratio 16 to 2?
   A. 8 to 0   **C.** 1 to 8
   B. 8 to 1   **D.** 0 to 8

7. Which ratio is NOT equal to 9 : 15?
   A. 3 : 5   **C.** 15 : 9
   B. 18 : 30   **D.** 90 : 150

8. A number cube has six faces with digits 1, 2, 3, 4, 5, and 6. What is the ratio of the number of digits
   greater than three to the number of digits less than three, written in simplest form?

   A. $\dfrac{4}{2}$ **C.** $\dfrac{1}{1}$

   B. $\dfrac{3}{2}$ **D.** $\dfrac{3}{3}$

9. Which percent represents the shaded part of the figure?

   A. 4%   **C.** 44%
   B. 40%   **D.** 400%

10. The surface of Earth is composed land and water. Since 29% is land, what percent of the surface of Earth
   is water?
   A. 29%   **C.** 92%
   B. 71%   **D.** 100%

11. Some items at a store are marked "25% off." Which fraction is equivalent to 25%?

    A. $\dfrac{1}{5}$ **C.** $\dfrac{2}{5}$

    B. $\dfrac{1}{3}$ **D.** $\dfrac{1}{4}$

Short Answer

12. There are 2 elephants and 3 lions at the zoo.
What is the ratio of elephants to lions?

13. The table shows the results of a survey about favorite vacation states.
What is the ratio of the number preferring Florida to the number preferring North Carolina?
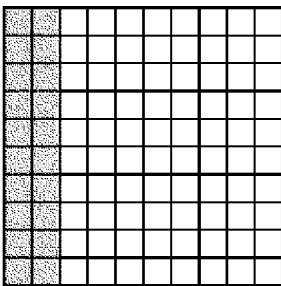
PREFERRED STATE

State	Florida	Arizona	Maine	North Carolina
Votes	17	10	5	14

14. Manuel makes a 10-ounce salad using the following ingredients and amounts.

Ingredient	Ounces
Lettuce	1
Tomatoes	3
Carrots	3
Cucumbers	3

What percent of the salad is NOT lettuce?

15. Because of complaints, the city had its air tested for pollutants. It was found that $\dfrac{1}{5}$ of the air sample contained pollutants. What percent of the air sample contained pollutants?

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Answer Section

MULTIPLE CHOICE

1. ANS: C   REF: 1102 Lesson 11-2: Equal Ratios
   OBJ: Use a table to generate equal ratios¸ write equal ratios¸ and tell if two ratios form a proportion.
   STO: N.ME.05.23   TOP: Intervention I31: Ratios and Equivalent Ratios
   KEY: ratios, proportions
2. ANS: C   REF: 1102 Lesson 11-2: Equal Ratios
   OBJ: Use a table to generate equal ratios¸ write equal ratios¸ and tell if two ratios form a proportion.
   STO: N.ME.05.23   TOP: Intervention I31: Ratios and Equivalent Ratios
   KEY: ratios, proportions
3. ANS: A   REF: 1101 Lesson 11-1: Understanding Ratios
   OBJ: Read and write ratios for various kinds of comparisons¸ and tell which situation represents a ratio that is a fraction (part-whole) and which represents a ratio that is not a fraction.
   STO: N.ME.05.23   TOP: Intervention I30: Understanding Ratios
   KEY: ratios, fractions
4. ANS: D   REF: 1101 Lesson 11-1: Understanding Ratios
   OBJ: Read and write ratios for various kinds of comparisons¸ and tell which situation represents a ratio that is a fraction (part-whole) and which represents a ratio that is not a fraction.
   STO: N.ME.05.23   TOP: Intervention I30: Understanding Ratios
   KEY: ratios, fractions
5. ANS: D   REF: 1101 Lesson 11-1: Understanding Ratios
   OBJ: Read and write ratios for various kinds of comparisons¸ and tell which situation represents a ratio that is a fraction (part-whole) and which represents a ratio that is not a fraction.
   STO: N.ME.05.23   TOP: Intervention I30: Understanding Ratios
   KEY: ratios, fractions
6. ANS: B   REF: 1102 Lesson 11-2: Equal Ratios
   OBJ: Use a table to generate equal ratios¸ write equal ratios¸ and tell if two ratios form a proportion.
   STO: N.ME.05.23   TOP: Intervention I31: Ratios and Equivalent Ratios
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   STO: N.ME.05.23   TOP: Intervention I31: Ratios and Equivalent Ratios
   KEY: ratios, proportions
9. ANS: B   REF: 1108 Lesson 11-8: Understanding Percent
   OBJ: Write a percent for a given situation on a 100-grid¸ and create a 100-grid that shows various percents.   STO: N.ME.05.08
   TOP: Intervention I35: Understanding Percent, NCTM 3-5: Num.1.5
   KEY: percents

10. ANS: B   REF: 1108 Lesson 11-8: Understanding Percent
OBJ: Write a percent for a given situation on a 100-grid¸ and create a 100-grid that shows various percents.   STO: N.ME.05.08
TOP: Intervention I35: Understanding Percent, NCTM 3-5: Num.1.5
KEY: percents, Geology

11. ANS: D   REF: 1108 Lesson 11-8: Understanding Percent
OBJ: Write a percent for a given situation on a 100-grid¸ and create a 100-grid that shows various percents.   STO: N.ME.05.08
TOP: Intervention I35: Understanding Percent, NCTM 3-5: Num.1.5
KEY: percents

SHORT ANSWER

12. ANS:

$$\frac{2}{3}$$

REF: 1101 Lesson 11-1: Understanding Ratios
OBJ: Read and write ratios for various kinds of comparisons¸ and tell which situation represents a ratio that is a fraction (part-whole) and which represents a ratio that is not a fraction.
STO: N.ME.05.23   TOP: Intervention I30: Understanding Ratios
KEY: ratios, fractions

13. ANS:
17 : 14

REF: 1101 Lesson 11-1: Understanding Ratios
OBJ: Read and write ratios for various kinds of comparisons¸ and tell which situation represents a ratio that is a fraction (part-whole) and which represents a ratio that is not a fraction.
STO: N.ME.05.23   TOP: Intervention I30: Understanding Ratios
KEY: ratios

14. ANS:
90%

REF: 1108 Lesson 11-8: Understanding Percent
OBJ: Write a percent for a given situation on a 100-grid¸ and create a 100-grid that shows various percents.   STO: N.ME.05.08
TOP: Intervention I35: Understanding Percent, NCTM 3-5: Num.1.5
KEY: percents

15. ANS:
20%

REF: 1108 Lesson 11-8: Understanding Percent
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TOP: Intervention I35: Understanding Percent, NCTM 3-5: Num.1.5
KEY: percents, Science