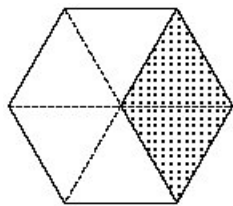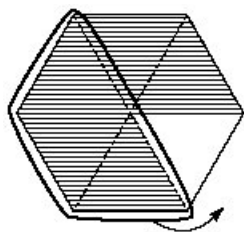# Ch 3 - Fractions Practice Test

True/False
Indicate whether the sentence or statement is true or false.

If false, write the corrected statement in the space provided.

_____ 1. $\frac{2}{3}$ of the hexagon is covered.

_____ 2. The subtraction sentence represented by the diagram is $\frac{5}{6} - \frac{1}{2}$.

_____ 3. You can find a common denominator for any pair of fractions.

_____ 4. There is **no** common denominator between 1 and 50 for this group of fractions: $\frac{3}{7}$, $\frac{1}{3}$, and $\frac{1}{2}$.

_____ 5. $\frac{4}{15}$ is smaller than $\frac{3}{12}$.

_____ 6. The smallest fraction in the group of fractions $\frac{3}{7}$, $\frac{7}{16}$, and $\frac{11}{24}$ is $\frac{11}{24}$.

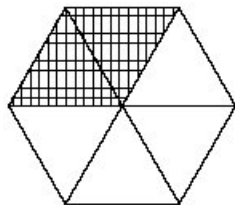_____ 7. The product of $4 \times \dfrac{3}{16}$ is greater than the product of $5 \times \dfrac{2}{15}$.

_____

_____ 8. The sum of $\dfrac{11}{10} + \dfrac{1}{2}$ is greater than $1\dfrac{2}{3}$.

_____

_____ 9. The difference of $2\dfrac{2}{5} - 1\dfrac{2}{7}$ is the same as the sum of $\dfrac{4}{5} + \dfrac{2}{7} + \dfrac{1}{35}$.

_____

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

_____ 10. What fraction of the hexagon is covered?

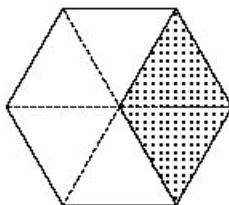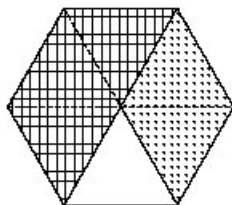 a. $\dfrac{1}{3}$ c. $\dfrac{1}{6}$

  b. $\dfrac{2}{3}$ d. $\dfrac{1}{12}$

_____ 11. How much more of the left hexagon is covered than the right hexagon?

  a. $\dfrac{1}{2}$ c. $\dfrac{1}{4}$

  b. $\dfrac{1}{3}$ d. $\dfrac{1}{6}$

_____ 12. Between 1 and 40, how many common denominators do the fractions $\dfrac{4}{3}$ and $\dfrac{3}{4}$ have?

  a. 1   c. 3
  b. 2   d. 4

____ 13. Which fraction is the smallest in this group of fractions: $\frac{2}{5}$, $\frac{5}{12}$, $\frac{13}{30}$, and $\frac{7}{15}$?

a. $\frac{2}{5}$ c. $\frac{13}{30}$

b. $\frac{5}{12}$ d. $\frac{7}{15}$

____ 14. What is the result of $\frac{6}{7} \div 1\frac{3}{4} - \frac{1}{2}$?

a. $\frac{3}{28}$ c. $2\frac{3}{28}$

b. $1\frac{3}{28}$ d. $3\frac{3}{28}$

Matching

Match the correct term to each of the following descriptions.

a. common denominator   f. manipulative
b. denominator   g. improper
c. numerator   h. mixed
d. repeated   i. multiplication
e. multiple   j. equivalent

____ 15. 5, 10, and 15 are examples of this for the number 5.

____ 16. $\frac{1}{8}$ and $\frac{2}{16}$ are an example of this type of fractions.

____ 17. $1\frac{1}{2}$, $2\frac{4}{5}$, and $3\frac{1}{3}$ are examples of this type of fraction.

____ 18. 12 and 24 are examples of this for the fractions $\frac{1}{2}$, $\frac{5}{6}$, and $\frac{2}{3}$.

____ 19. 5 is this part of the fraction for fractions such as $\frac{2}{5}$, $\frac{6}{5}$, and $\frac{3}{5}$.

____ 20. Marbles are an example of this type of tool that helps to visually understand mathematical concepts or skills.
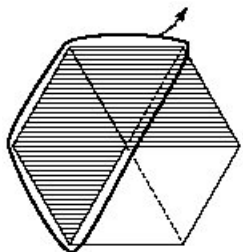
Short Answer

Write your answer in the space provided.

21. Write a subtraction sentence to represent each diagram.
a)
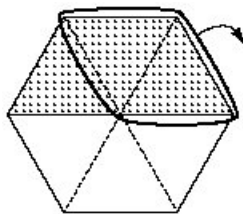
b)

22. Find a common denominator for each pair of fractions. Rewrite each fraction with the common denominator.

a) $\dfrac{2}{9}$, and $\dfrac{17}{30}$

b) $\dfrac{5}{12}$ and $\dfrac{4}{15}$

c) $\dfrac{5}{8}$ and $\dfrac{13}{28}$

23. Evaluate each of the following. Show your answer in the simplest form.

a) $4 \div \dfrac{1}{4}$

b) $7 \div \dfrac{3}{7}$

c) $2 \div \dfrac{5}{2}$

24. Find a common denominator for each pair of fractions. Rewrite each fraction with the common denominator, and evaluate.

a) $\dfrac{5}{6} - \dfrac{2}{3}$

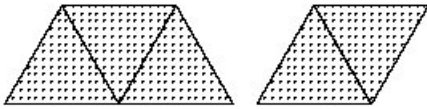b) $\dfrac{7}{12} - \dfrac{3}{8}$

c) $\dfrac{4}{7} - \dfrac{1}{3}$

25. Find the value of x.

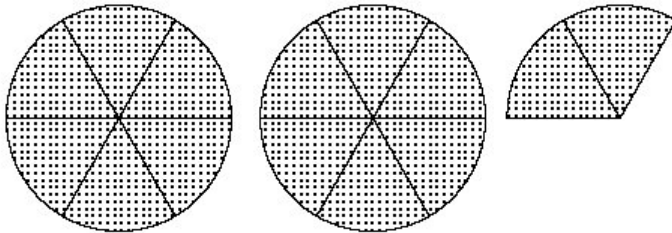a) $\dfrac{1}{6} = \dfrac{x}{72}$

b) $\dfrac{2}{3} + 1 = \dfrac{x}{9}$

26. What fraction does each group of diagrams represent? Show your answer as an improper fraction and as a mixed number.

a)

b)

c)
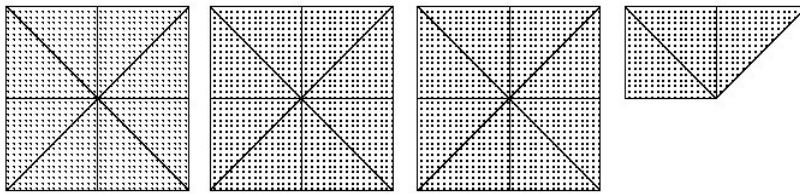
Problem

Write your answer in the space provided.

27. Ms. Lohan's art class has decided to put some money together to buy her a birthday gift. There are 25 students in the class. They want to give her a paint set that includes: 10 brushes for $15.00, 3 canvas boards for $35.00, 2 sketchpads for $10.00, and 15 sketch pencils for $5.00.
    a) What is the total cost of the paint set?
    b) Write a fraction to represent the cost of each item out of the total cost. Write each fraction in its simplest form.
    c) Write a fraction to represent the cost of each item for one student.
    d) Write an addition sentence for the group of fractions in part c). Find the amount of money each student has to contribute for the gift.

Ch 3 - Fractions Practice Test
Answer Section

TRUE/FALSE

1. ANS: F

   $\dfrac{1}{3}$ of the hexagon is covered.

   DIF: Level 1   REF: Application   OBJ: Section 3.1   STO: NSN-7m2
   TOP: Number Sense and Numeration   KEY: Fractions

2. ANS: T   DIF: Level 2   REF: Application   OBJ: Section 3.2
   STO: NSN-7m2   TOP: Number Sense and Numeration   KEY: Subtracting Fractions

3. ANS: T   DIF: Level 2   REF: Knowledge/Understanding
   OBJ: Section 3.3   STO: NSN-7m1   TOP: Number Sense and Numeration
   KEY: Common Denominator

4. ANS: F   DIF: Level 3   REF: Application   OBJ: Section 3.3
   42 is the Common Denominator (6 x 7 = **42**,   3 x 14 = **42**,   2 x 21 = **42)**

5. ANS: F

   $\dfrac{4}{15}$ is greater than $\dfrac{3}{12}$.

   Rationale:

   $\dfrac{4}{15} = \dfrac{16}{60}$

   $\dfrac{3}{12} = \dfrac{15}{60}$

   DIF: Level 3   REF: Application   OBJ: Section 3.3   STO: NSN-7m1
   TOP: Number Sense and Numeration   KEY: Comparing Fractions

6. ANS: F

   The smallest fraction in the group of fractions $\dfrac{3}{7}, \dfrac{7}{16},$ and $\dfrac{11}{24}$ is $\dfrac{3}{7}$.

   Rationale:

   A common denominator for $\dfrac{3}{7}, \dfrac{7}{16},$ and $\dfrac{11}{24}$ is 336.

   $\dfrac{144}{336} < \dfrac{147}{336} < \dfrac{154}{336}$

   DIF: Level 4   REF: Application   OBJ: Section 3.3   STO: NSN-7m1
   TOP: Number Sense and Numeration   KEY: Comparing Fractions

7. ANS: T   DIF: Level 2   REF: Application   OBJ: Section 3.4
   STO: NSN-7m19   TOP: Number Sense and Numeration   KEY: Multiplying Fractions

8. ANS: F

The sum of $\dfrac{11}{10} + \dfrac{1}{2}$ is smaller than $1\dfrac{2}{3}$.

Rationale:

$$\frac{11}{10} + \frac{1}{2} = \frac{33}{30} + \frac{15}{30} = \frac{48}{30}$$

$$1\frac{2}{3} = \frac{5}{3} = \frac{50}{30}$$

DIF: Level 3   REF: Application   OBJ: Section 3.4   STO: NSN-7m1
TOP: Number Sense and Numeration   KEY: Comparing Fractions
9. ANS: T   DIF: Level 4   REF: Application   OBJ: Section 3.4
STO: NSN-7m6   TOP: Number Sense and Numeration   KEY: Adding/Subtracting Fractions

MULTIPLE CHOICE

10. ANS: A   DIF: Level 1   REF: Application   OBJ: Section 3.1
STO: NSN-7m2   TOP: Number Sense and Numeration   KEY: Fractions
11. ANS: A   DIF: Level 3   REF: Application   OBJ: Section 3.1
STO: NSN-7m2   TOP: Number Sense and Numeration   KEY: Comparing Fractions
12. ANS: C   DIF: Level 3   REF: Application   OBJ: Section 3.3
STO: NSN-7m11   TOP: Number Sense and Numeration   KEY: Common Denominator
13. ANS: A   DIF: Level 3   REF: Application   OBJ: Section 3.3
STO: NSN-7m1   TOP: Number Sense and Numeration   KEY: Comparing Fractions
14. ANS: C   DIF: Level 4   REF: Application   OBJ: Section 3.4
STO: NSN-7m6   TOP: Number Sense and Numeration   KEY: Adding/Subtracting Fractions

MATCHING

15. ANS: E   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Multiple
16. ANS: J   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Equivalent fractions
17. ANS: H   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Mixed fraction
18. ANS: A   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Common Denominator
19. ANS: B   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Denominator
20. ANS: F   DIF: Level 2   REF: Knowledge/Understanding
OBJ: Section 3.5   STO: NSN-7m2   TOP: Number Sense and Numeration
KEY: Manipulative

SHORT ANSWER

21. ANS:

a) $\dfrac{1}{2} - \dfrac{1}{3} = \dfrac{1}{6}$

b) $\dfrac{2}{3} - \dfrac{1}{2} = \dfrac{1}{6}$

DIF: Level 3   REF: Application   OBJ: Section 3.2   STO: NSN-7m2
TOP: Number Sense and Numeration   KEY: Subtracting Fractions

22. ANS:
Each pair of fractions has more than one common denominator. Each answer below is based on the use of the lowest common denominator.

a) $\dfrac{20}{90}, \dfrac{51}{90}$

b) $\dfrac{25}{60}, \dfrac{16}{60}$

c) $\dfrac{35}{56}, \dfrac{26}{56}$

DIF: Level 3   REF: Application   OBJ: Section 3.3   STO: NSN-7m1
TOP: Number Sense and Numeration   KEY: Common Denominator

23. ANS:

a) $\dfrac{4}{4} = 1$

b) $\dfrac{21}{7} = 3$

c) $\dfrac{10}{2} = 5$

DIF: Level 1   REF: Application   OBJ: Section 3.4   STO: NSN-7m19
TOP: Number Sense and Numeration   KEY: Multiplying Fractions by Whole Numbers

24. ANS:
Each pair of fractions has more than one common denominator.

a) $\dfrac{10}{12} - \dfrac{8}{12} = \dfrac{2}{12}$

b) $\dfrac{14}{24} - \dfrac{9}{24} = \dfrac{5}{24}$

c) $\dfrac{12}{21} - \dfrac{7}{21} = \dfrac{5}{21}$

DIF: Level 3   REF: Application   OBJ: Section 3.4   STO: NSN-7m1
TOP: Number Sense and Numeration   KEY: Subtracting Fractions

25. ANS:

   a) $\dfrac{1}{6} = \dfrac{12}{72}$

   For $\dfrac{1}{6} = \dfrac{x}{72}$, $x = 12$.

   b) $\dfrac{2}{3} \div 1 = \dfrac{15}{9}$

   For $\dfrac{2}{3} \div 1 = \dfrac{x}{9}$, $x = 15$.

   DIF: Level 3   REF: Application   OBJ: Section 3.4   STO: NSN-7m6
   TOP: Number Sense and Numeration   KEY: Adding/Subtracting Fractions

26. ANS:

   a) $\dfrac{5}{3} = 1\dfrac{2}{3}$

   b) $\dfrac{14}{6} = \dfrac{7}{3} = 2\dfrac{1}{3}$

   c) $\dfrac{27}{8} = 3\dfrac{3}{8}$

   DIF: Level 2   REF: Application   OBJ: Section 3.5   STO: NSN-7m2
   TOP: Number Sense and Numeration   KEY: Adding Fractions

PROBLEM

27. ANS:
   a) $15 + 35 + 10 + 5 = 65$
      The total cost is $65.00.
   b) Brushes: $\dfrac{15}{65} = \dfrac{3}{13}$; Canvas boards: $\dfrac{35}{65} = \dfrac{7}{13}$; Sketchpads: $\dfrac{10}{65} = \dfrac{2}{13}$; Pencils: $\dfrac{5}{65} = \dfrac{1}{13}$
   c) Brushes: $\dfrac{15}{25} = \dfrac{3}{5}$; Canvas boards: $\dfrac{35}{25} = \dfrac{7}{5}$; Sketchpads: $\dfrac{10}{25} = \dfrac{2}{5}$; Pencils: $\dfrac{5}{25} = \dfrac{1}{5}$
   d) $\dfrac{15}{25} \div \dfrac{35}{25} \div \dfrac{10}{25} \div \dfrac{5}{25} = \dfrac{65}{25} = \dfrac{13}{5} = 2\dfrac{3}{5} = 2.6$
      Each student has to contribute $2.60 for the gift.

   DIF: Level 3   REF: Thinking/Inquiry/Problem Solving   OBJ: Section 3.1
   STO: NSN-7m2   TOP: Number Sense and Numeration   KEY: Adding Fractions