SKILL 1: Practice

Answer each question.

1. Which of the following are factors of 16: 1, 2, 3, 4, 5, 6, 7, 8? _____

2. Which of the following are factors of 20: 1, 2, 3, 4, 5, 6, 7, 8? _____

3. List all factors of 28. _____

4. List all factors of 48. _____

5. List all factors of 100. _____

Complete the table. Write *yes* or *no*.

	Divisible by:				
	2	3	5	6	10
6. 28					
7. 40					
8. 72					
9. 144					
10. 225					
11. 360					
12. 504					
13. 600					

14. There are 365 days in a non-leap year.
    By which of these numbers is 365 divisible: 2, 3, 5, 6, 10? _____

TEST PREP

15. Which is not a factor of 54?
    Skill 1

    A 6   C 9
    B 7   D 27

16. Which is not divisible by 6?
    Skill 1

    F 42   H 123
    G 132   J 522

SKILL 3: Practice

....

Find the prime factorization.

1. 12

_____

2. 40

_____

3. 64

_____

4. 36

_____

5. 60

_____

6. 65

_____

7. 20

_____

8. 30

_____

9. 56

_____

10. 21

_____

11. 18

_____

12. 16

_____

13. 630

_____

14. 1,001

_____

15. 625

_____

16. 400

_____

17. 2,000

_____

18. 560

_____

19. The prime factorization of a number is
$2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5$.
What is the number?

_____

20. What number is in the prime factorization of all even numbers? _____

21. Could $2 \times 4 \times 5 \times 9 \times 11$ be the prime factorization of a number? Explain.

_____

TEST PREP

22. Which is the prime factorization
of 48?

Skill 3

  A $2 \times 2 \times 2 \times 2 \times 3$

  B $2 \times 2 \times 2 \times 6$

  C 4×12

  D 3×16

23. Which number is not composite?

Skill 2

  F 62

  G 77

  H 95

  J 53

Name _____ Date _____ Class _____

SKILL 14: Practice

Write an improper fraction and a mixed number to describe each picture.

1.

_____

2.

_____

3.

_____
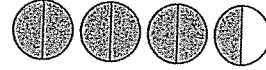
4.

_____
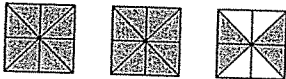
5.

_____

6.

_____

Write each mixed number as an improper fraction.

7. $2\frac{1}{6}$ _____

8. $5\frac{1}{5}$ _____

9. $1\frac{2}{5}$ _____

10. $13\frac{1}{2}$ _____

11. $8\frac{3}{4}$ _____

12. $3\frac{2}{3}$ _____

13. $14\frac{2}{9}$ _____

14. $12\frac{2}{3}$ _____

15. $3\frac{5}{8}$ _____

16. $9\frac{1}{9}$ _____

17. $7\frac{4}{5}$ _____

18. $8\frac{1}{3}$ _____

19. $4\frac{1}{4}$ _____

20. $9\frac{1}{2}$ _____

21. $12\frac{1}{3}$ _____

22. $2\frac{4}{7}$ _____

Solve.

23. Muriel counted 17 quarters in her bank. Write the amount of money she has in her bank as a mixed number. _____

TEST PREP

24. Which shows the improper fraction for $6\frac{4}{7}$?

Skill 14

A $\frac{10}{7}$ C $\frac{46}{7}$

B $\frac{42}{7}$ D $\frac{64}{7}$

25. Which shows equivalent fractions for $\frac{5}{6}$ and for $\frac{11}{15}$ using the least common denominator?

Skill 13

F $\frac{25}{30}, \frac{22}{30}$ H $\frac{5}{30}, \frac{11}{30}$

G $\frac{75}{90}, \frac{66}{90}$ J $\frac{50}{60}, \frac{44}{60}$

Name _____ Date _____ Class _____

SKILL 15: Practice

Write each fraction as a whole or mixed number.
Express fractions in simplest form.

1. $\frac{30}{6}$ _____ 2. $\frac{43}{7}$ _____ 3. $\frac{14}{7}$ _____

4. $\frac{24}{6}$ _____ 5. $\frac{32}{16}$ _____ 6. $\frac{48}{8}$ _____

7. $\frac{72}{9}$ _____ 8. $\frac{80}{10}$ _____ 9. $\frac{16}{5}$ _____

10. $\frac{56}{7}$ _____ 11. $\frac{90}{9}$ _____ 12. $\frac{68}{11}$ _____

13. $\frac{76}{12}$ _____ 14. $\frac{45}{5}$ _____ 15. $\frac{38}{19}$ _____

16. $\frac{88}{10}$ _____ 17. $\frac{122}{11}$ _____ 18. $\frac{96}{6}$ _____

19. $\frac{144}{12}$ _____ 20. $\frac{56}{3}$ _____ 21. $\frac{39}{9}$ _____

22. $\frac{120}{8}$ _____ 23. $\frac{87}{3}$ _____ 24. $\frac{67}{4}$ _____

25. $\frac{94}{3}$ _____ 26. $\frac{135}{9}$ _____ 27. $\frac{91}{7}$ _____

Show each dinosaur measurement as a mixed number.

28. A geranosaurus was $\frac{6}{5}$ m long. _____

29. Each arm of a deinocherius was $\frac{17}{2}$ ft long. _____

30. A hypsilophodon was $\frac{23}{10}$ m long. _____

TEST PREP

31. Write $\frac{31}{7}$ as a whole or mixed number.

    Skill 15

  A 4   C $\frac{4}{7}$

  B $3\frac{4}{7}$ D $4\frac{3}{7}$
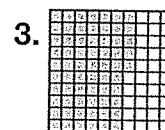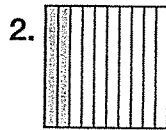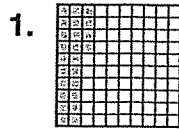
32. Which shows the mixed number for $\frac{53}{7}$?

    Skill 14

  F $8\frac{4}{7}$ H $7\frac{5}{7}$

  G $7\frac{4}{7}$ J $6\frac{11}{7}$

SKILL 17: Practice

Write a decimal and a fraction in simplest form for each picture.

1. [grid picture]

2. [grid picture]

3. [grid picture]

_____   _____   _____

Write a fraction in simplest form for each decimal.

4. 0.34 _____   5. 0.9 _____   6. 0.64 _____

7. 0.12 _____   8. 0.72 _____   9. 0.65 _____

10. 0.4 _____   11. 0.27 _____   12. 0.32 _____

Write a decimal for each fraction.

13. $\frac{2}{5}$ _____   14. $\frac{1}{2}$ _____   15. $\frac{9}{20}$ _____

16. $\frac{12}{25}$ _____   17. $\frac{3}{4}$ _____   18. $\frac{42}{50}$ _____

19. $\frac{11}{20}$ _____   20. $\frac{7}{25}$ _____   21. $\frac{16}{25}$ _____

Solve.
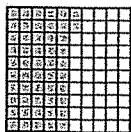
22. A thumb tack is about 0.85 cm long. Write the length of the thumbtack as a fraction in simplest form. _____

23. Jason has a drill bit that is $\frac{21}{25}$ cm in diameter. Write the diameter of the drill bit as a decimal. _____

24. Tonya's caulking gun handle is 0.98 ft long. Write the length of the handle as a fraction in simplest form. _____

TEST PREP

25. What decimal is shown?   *Skill 17*

[grid picture]

   A 0.52   C 0.13

   B 0.25   D 1.3

26. Which set of fractions is in order from least to greatest?

Skill 16

F $\frac{2}{3}, \frac{3}{5}, \frac{7}{10}$ H $\frac{2}{5}, \frac{3}{7}, \frac{1}{2}$

G $\frac{8}{9}, \frac{2}{3}, \frac{1}{6}$ J $\frac{5}{8}, \frac{1}{4}, \frac{3}{7}$

SKILL 4: Practice

Give the place value of the underlined digit. Then round the number to this place value.

1. 42.4

2. 7.7961

3. 96.08

_____

_____

4. 1.881

5. 20.993

6. 13.2043

_____

_____

Round to the underlined place value.

7. 27.27

8. 191.85

9. 796.301

10. 7.094

_____

11. 298.99

12. 0.555

13. 0.6921

14. 409.7

_____

15. 0.607

16. 1.009

17. 33.255

18. 1.02479

_____

19. 3.042

20. 8.1919

21. 50.96

22. 71.6

_____

Marc said that to the nearest dollar, he spent $15.00 on a CD. Find each answer.

23. What is the least amount that Marc could have spent?

_____

24. What is the greatest amount that Marc could have spent?

_____

TEST PREP

25. Which shows 1.356 rounded to the nearest tenth?

Skill 4

A 1.3   C 1.35

B 1.4   D 1.36

26. Which is 0.06 written as a fraction?

Skill 2

F $\frac{6}{1,000}$ H $\frac{6}{100}$

G $\frac{6}{10}$ J $\frac{100}{6}$

SKILL 3: Practice

Use >, <, or = to compare the numbers.

1. −6 ◯ −5

2. 1 ◯ −4

3. 12 ◯ −20

4. 9 ◯ 15

5. −8 ◯ −12

6. −30 ◯ 0

7. −20 ◯ 13

8. −16 ◯ 16

9. 18 ◯ |−18|

10. 40 ◯ −100

11. −50 ◯ 45

12. 6 ◯ −36

13. 0 ◯ −32

14. |7| ◯ 7

15. |−3| ◯ |−8|

16. |17| ◯ 17

17. |−17| ◯ 17

18. −74 ◯ 60

Order each set of integers from least to greatest.

19. −9, 4, 0

_____

20. −7, −8, −4

_____

21. −3, 2, 6, −10

_____

22. 10, −20, 30, −30

_____

23. −5, 17, −19, 6

_____

24. 3, −3, 10, −10

_____

Solve.

25. The low temperature on Monday was 5°F, the low temperature on Tuesday was −5°F, and the low temperature on Wednesday was −1°F. On which day did the lowest temperature occur?

_____

TEST PREP

26. Which list shows the integers −3, −4, and 2 in order from least to greatest?

Skill 3

A −4, −3, 2

C 2, −3, −4

B −3, −4, 2

D 2, −4, −3

27. Find |28|.

Skill 2

F −28

H 28

G 0

J 56

Section A: Integers

SKILL 4: Practice

Use the number line to find each sum.

```
←—+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——→
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0   1   2   3   4   5   6   7   8   9  10
```
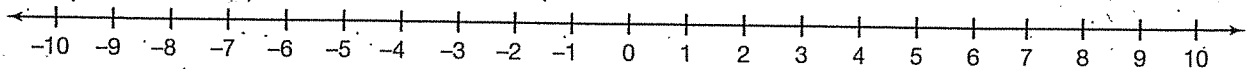
1. $-2 + 7 =$ _____

2. $3 + (-5) =$ _____

3. $5 + 3 =$ _____

4. $7 + (-8) =$ _____

5. $8 + (-8) =$ _____

6. $-3 + (-2) =$ _____

7. $-4 + 9 =$ _____

8. $2 + (-9) =$ _____

9. $3 + (-1) =$ _____

10. $-6 + (-2) =$ _____

11. $4 + 5 =$ _____

12. $-8 + 5 =$ _____

13. $7 + 3 =$ _____

14. $-3 + 2 =$ _____

15. $5 + (-4) =$ _____

Add the integers.

16. $-7 + 12 =$ _____

17. $35 + (-1) =$ _____

18. $-10 + (-12) =$ _____

19. $-6 + (-5) =$ _____

20. $0 + (-6) =$ _____

21. $50 + (-2) =$ _____

22. $1 + (-7) =$ _____

23. $15 + (-15) =$ _____

24. $2 + (-9) =$ _____

25. $-31 + 3 =$ _____

26. $4 + (-12) =$ _____

27. $-23 + 8 =$ _____

28. $10 + (-15) =$ _____

29. $42 + 16 =$ _____

30. $-1 + (-4) =$ _____

Solve.

31. The temperature in Middlefield at 6 A.M. was $-15°F$. By 3 P.M., the temperature had risen 19°F. What was the temperature at 3 P.M.?

_____

32. A diver was 7 m below the surface of the water. The diver then descended 3 m. What integer represents the diver's position after the descent?

_____

TEST PREP

33. Find $-12 + 8$.

Skill 4

A -20 **C** 4

B -4 **D** 20

34. Which number is less than -12?

Skill 3

F -14 **H** -3

G -11 **J** 4

SKILL 5: Practice

Write an addition for each subtraction. Then show the subtraction result.

1. $10 - 14$

Addition: _____

So, $10 - 14 =$ _____.

2. $-3 - 11$

Addition: _____

So, $-3 - 11 =$ _____.

3. $-8 - (-6)$

Addition: _____

So, $-8 - (-6) =$ _____.

4. $50 - (-9)$

Addition: _____

So, $50 - (-9) =$ _____.

5. $-15 - 8$

Addition: _____

So, $-15 - 8 =$ _____.

6. $20 - 55$

Addition: _____

So, $20 - 55 =$ _____.

Subtract.

7. $-1 - (-15)$ _____

8. $20 - 3$ _____

9. $11 - (-5)$ _____

10. $20 - 2$ _____

11. $-12 - (-12)$ _____

12. $-2 - (-4)$ _____

13. $7 - 13$ _____

14. $3 - 5$ _____

15. $-6 - 11$ _____

16. $9 - 16$ _____

17. $0 - (-7)$ _____

18. $-4 - (-1)$ _____

19. $5 - (-3)$ _____

20. $-9 - 25$ _____

21. $-18 - 10$ _____

22. $-11 - (-8)$ _____

23. $-16 - 9$ _____

24. $10 - (-9)$ _____

25. $-25 - (-40)$ _____

26. $-48 - 0$ _____

27. $-8 - 7$ _____

Solve.

28. The elevation of New Orleans, Louisiana, is 8 feet below sea level. The elevation of Lake Champlain, Vermont, is 95 feet above sea level. How much higher is the elevation of Lake Champlain than New Orleans?

_____

29. In Fairbanks, Alaska, a typical January temperature is $-13°F$ and a typical April temperature is $30°F$. What is the difference between these temperatures?

_____

TEST PREP

30. Find $2 - 9$.

Skill 5

A 11

B 7

C −7

D −11

31. Find $-2 + 8$.

Skill 4

F 10

G 6

H −6

J −10

Name _____ Date _____ Class _____

SKILL 16: Practice

Write each rational number as a ratio of two integers.

1. $-3\frac{3}{4}$ _____

2. $1\frac{6}{7}$ _____

3. -0.8 _____

4. $-\frac{5}{6}$ _____

5. $-4\frac{2}{5}$ _____

6. $-\frac{34}{35}$ _____

7. 0.55 _____

8. $-1.\overline{3}$ _____

9. $8\frac{2}{3}$ _____

Use $>$, $<$, or $=$ to compare the rational numbers.

10. $\frac{2}{3} \bigcirc \frac{1}{4}$

11. $-\frac{2}{3} \bigcirc -\frac{3}{4}$

12. $-5\frac{1}{2} \bigcirc 7\frac{1}{2}$

13. $3\frac{1}{5} \bigcirc -7\frac{2}{5}$

14. $-1\frac{1}{4} \bigcirc -1\frac{1}{5}$

15. $-\frac{3}{4} \bigcirc -\frac{3}{8}$

16. $-5.5 \bigcirc -5\frac{1}{2}$

17. $\frac{2}{3} \bigcirc -\frac{19}{20}$

18. $-3\frac{7}{8} \bigcirc -1\frac{5}{6}$

19. $\frac{4}{5} \bigcirc -12\frac{3}{4}$

20. $0.7 \bigcirc -0.9$

21. $0 \bigcirc -0.3$

22. $-\frac{1}{3} \bigcirc -0.\overline{3}$

23. $\frac{17}{16} \bigcirc -\frac{17}{16}$

24. $0.\overline{6} \bigcirc \frac{2}{3}$

25. $\frac{5}{8} \bigcirc \frac{3}{32}$

26. $-\frac{16}{3} \bigcirc -\frac{14}{3}$

27. $0.75 \bigcirc \frac{3}{4}$

Solve.

28. On Monday, the temperature went down to $-15°F$ at a weather station in Canada. On Tuesday, the temperature dropped to $-19.5°F$. Which day had the lower temperature?

_____

29. Last year, Lucille grew 1.25 inches. Berta grew $1\frac{2}{3}$ inches. Which girl grew more?

_____

TEST PREP

30. Which number is greater than $-\frac{2}{3}$?

Skill 16

A $-\frac{1}{3}$ C $-\frac{4}{5}$

B $-\frac{3}{4}$ D -1

31. Find $-7 + 18$.

Skill 4

F -25 H 11

G -11 J 25

Section C: Rational Numbers and Exponents