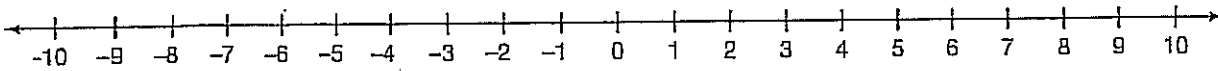


SKILL 1: Practice

Think about where each integer is located on the number line.
Tell whether the integer is positive, negative, or neither.



- | | | |
|-----------------------|----------------------|----------------------|
| 1. -6 <u>Negative</u> | 2. -10 <u>neg.</u> | 3. 50 <u>pos.</u> |
| 4. 8 <u>pos</u> | 5. -37 <u>neg</u> | 6. -100 <u>neg</u> |
| 7. 9 <u>pos</u> | 8. 43 <u>pos</u> | 9. 250 <u>pos</u> |
| 10. -21 <u>neg</u> | 11. 0 <u>neither</u> | 12. 1,000 <u>pos</u> |

Write the opposite of each integer.

- | | | |
|-------------------|-------------------|---------------------|
| 13. 18 <u>-18</u> | 14. 0 <u>0</u> | 15. 160 <u>-160</u> |
| 16. -25 <u>25</u> | 17. -48 <u>48</u> | 18. -83 <u>83</u> |
| 19. -16 <u>16</u> | 20. -2 <u>2</u> | 21. -76 <u>76</u> |
| 22. -5 <u>5</u> | 23. 11 <u>-11</u> | 24. -125 <u>125</u> |

Write the integer that best describes each situation.

- | | |
|-----------------------------------------|--------------------------------|
| 25. 35 ft below sea level <u>-35</u> | 26. 78°F above zero <u>78</u> |
| 27. A gain of \$60 <u>60</u> | 28. A debt of \$20 <u>-20</u> |
| 29. 8-yard loss <u>-8</u> | 30. \$80 profit <u>80</u> |
| 31. 3 seconds before lift-off <u>-3</u> | 32. 7 steps backward <u>-7</u> |



33. Which integer is the opposite of -12?
- Skill 1
- | | |
|-------|-------------|
| A -21 | C 12 |
| B -12 | D 21 |

34. Which integer is neither positive nor negative?
- Skill 1
- | | |
|------------|------|
| F -1 | H 1 |
| G 0 | J 10 |

SKILL 2: Practice *Key*

Find each absolute value.

- | | | |
|-----------------------------|------------------------------|-------------------------------|
| 1. $ 10 = \underline{10}$ | 2. $ -29 = \underline{29}$ | 3. $ -13 = \underline{13}$ |
| 4. $ 92 = \underline{92}$ | 5. $ 36 = \underline{36}$ | 6. $ -56 = \underline{56}$ |
| 7. $ 0 = \underline{0}$ | 8. $ 80 = \underline{80}$ | 9. $ -400 = \underline{400}$ |
| 10. $ 21 = \underline{21}$ | 11. $ -48 = \underline{48}$ | 12. $ -47 = \underline{47}$ |
| 13. $ 42 = \underline{42}$ | 14. $ -31 = \underline{31}$ | 15. $ 74 = \underline{74}$ |
| 16. $ 17 = \underline{17}$ | 17. $ -17 = \underline{17}$ | 18. $ -74 = \underline{74}$ |

Name two integers that have the given absolute value.

- | | |
|------------------------------------------------------|---------------------------------------------------------|
| 19. 14 <u>-14 & 14</u> | 20. 3 <u>-3 & 3</u> |
| 21. 32 <u>-32 & 32</u> | 22. 19 <u>-19 & 19</u> |
| 23. 20 <u>-20 & 20</u> | 24. 100 <u>-100 & 100</u> |
| 25. 45 <u>-45 & 45</u> | 26. 53 <u>-53 & 53</u> |
| 27. 96 <u>-96 & 96</u> | 28. 400 <u>-400 & 400</u> |
| 29. 84 <u>-84 & 84</u> | 30. 37 <u>-37 & 37</u> |

Solve.

31. Elevations above sea level are represented by positive numbers. Elevations below sea level are represented by negative numbers. What two elevations have an absolute value of 1,000 ft?

 -1000 & $1,000$ 

32. Find
- $|-11|$
- .

A -11 C 1
 B -1 **D 11**

Skill 2

33. What is the opposite of
- -36
- ?

F 63 H 0
G 36 J -63

Skill 1

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. $-9, 4, 0$ <u>-9, 0, 4</u> | 20. $-7, -8, -4$ <u>-8, -7, -4</u> |
| 21. $-3, 2, 6, -10$ <u>-10, -3, 2, 6</u> | 22. $10, -20, 30, -30$ <u>-30, -20, 10, 30</u> |
| 23. $-5, 17, -19, 6$ <u>-19, -5, 6, 17</u> | 24. $3, -3, 10, -10$ <u>-10, -3, 3, 10</u> |

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?

Tuesday



26. Which list shows the integers $-3, -4,$ and 2 in order from least to greatest?
- Skill 3
- | | |
|-------------------------------------|-------------------------------------|
| <input type="radio"/> A $-4, -3, 2$ | <input type="radio"/> C $2, -3, -4$ |
| <input type="radio"/> B $-3, -4, 2$ | <input type="radio"/> D $2, -4, -3$ |

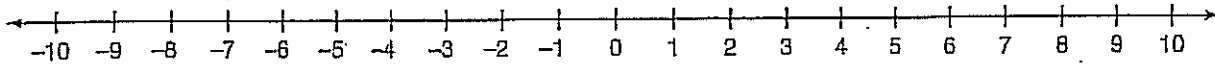
27. Find $|28|$.

- | | |
|-------------------------------|-----------------------------------------|
| <input type="radio"/> F -28 | <input checked="" type="radio"/> H 28 |
| <input type="radio"/> G 0 | <input type="radio"/> J 56 |

Skill 2

SKILL 4: Practice

Use the number line to find each sum.



1. $-2 + 7 = \underline{5}$ 2. $3 + (-5) = \underline{-2}$ 3. $5 + 3 = \underline{8}$
 4. $7 + (-8) = \underline{-1}$ 5. $8 + (-8) = \underline{0}$ 6. $-3 + (-2) = \underline{-5}$
 7. $-4 + 9 = \underline{5}$ 8. $2 + (-9) = \underline{-7}$ 9. $3 + (-1) = \underline{2}$
 10. $-6 + (-2) = \underline{-8}$ 11. $4 + 5 = \underline{9}$ 12. $-8 + 5 = \underline{-3}$
 13. $7 + 3 = \underline{10}$ 14. $-3 + 2 = \underline{-1}$ 15. $5 + (-4) = \underline{1}$

Add the integers.

16. $-7 + 12 = \underline{5}$ 17. $35 + (-1) = \underline{34}$ 18. $-10 + (-12) = \underline{-22}$
 19. $-6 + (-5) = \underline{-11}$ 20. $0 + (-6) = \underline{-6}$ 21. $50 + (-2) = \underline{48}$
 22. $1 + (-7) = \underline{-6}$ 23. $15 + (-15) = \underline{0}$ 24. $2 + (-9) = \underline{-7}$
 25. $-31 + 3 = \underline{-28}$ 26. $4 + (-12) = \underline{-8}$ 27. $-23 + 8 = \underline{-15}$
 28. $10 + (-15) = \underline{-5}$ 29. $42 + 16 = \underline{58}$ 30. $-1 + (-4) = \underline{-5}$

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.?

 4°F

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?

 -10 

33. Find
- $-12 + 8$
- .

A -20 C 4
 B -4 D 20

Skill 4

34. Which number is less than
- -12
- ?

F -14 H -3
 G -11 J 4

Skill 3

SKILL 5: Practice

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

1. $10 - 14$

Addition: $10 + (-14)$

So, $10 - 14 = -4$

2. $-3 - 11$

Addition: $-3 + (-11)$

So, $-3 - 11 = -14$

3. $-8 - (-6)$

Addition: $-8 + 6$

So, $-8 - (-6) = -2$

4. $50 - (-9)$

Addition: $50 + 9$

So, $50 - (-9) = 59$

5. $-15 - 8$

Addition: $-15 + (-8)$

So, $-15 - 8 = -23$

6. $20 - 55$

Addition: $20 + (-55)$

So, $20 - 55 = -35$

Subtract.

7. $-1 - (-15) = 14$

8. $20 - 3 = 17$

9. $11 - (-5) = 16$

10. $20 - 2 = 18$

11. $-12 - (-12) = 0$

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

13. $7 - 13 = -6$

14. $3 - 5 = -2$

15. $-6 - 11 = -17$

16. $9 - 16 = -7$

17. $0 - (-7) = 7$

18. $-4 - (-1) = -3$

19. $5 - (-3) = 8$

20. $-9 - 25 = -34$

21. $-18 - 10 = -28$

22. $-11 - (-8) = -3$

23. $-16 - 9 = -25$

24. $10 - (-9) = 19$

25. $-25 - (-40) = 15$

26. $-48 - 0 = -48$

27. $-8 - 7 = -15$

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?

103 ft

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?

43°F



30. Find $2 - 9$.

A 11

B 7

C -7

D -11

Skill 5

31. Find $-2 + 8$.

F 10

G 6

H -6

J -10

Skill 4

SKILL 6: Practice

Key

Tell whether the product is positive, negative, or 0. Then multiply.

1. $-2 \cdot 10$

neg.
 $-2 \cdot 10 = \underline{-20}$

2. $-8 \cdot (-9)$

pos.
 $-8 \cdot (-9) = \underline{72}$

3. $7 \cdot 15$

pos.
 $7 \cdot 15 = \underline{105}$

4. $0 \cdot (-23)$

0
 $0 \cdot (-23) = \underline{0}$

5. $-42 \cdot 3$

neg.
 $-42 \cdot 3 = \underline{-126}$

6. $-12 \cdot (-15)$

pos.
 $-12 \cdot (-15) = \underline{180}$

Multiply.

7. $-2 \cdot 4 = \underline{-8}$

8. $-5 \cdot 6 = \underline{-30}$

9. $4 \cdot (-5) = \underline{-20}$

10. $-1 \cdot (-13) = \underline{13}$

11. $2 \cdot (-8) = \underline{-16}$

12. $5 \cdot 19 = \underline{95}$

13. $-3 \cdot (-6) = \underline{18}$

14. $7 \cdot (-4) = \underline{-28}$

15. $-8 \cdot 11 = \underline{-88}$

16. $-6 \cdot 20 = \underline{-120}$

17. $-3 \cdot (-12) = \underline{36}$

18. $-4 \cdot 5 = \underline{-20}$

19. $-7 \cdot 7 = \underline{-49}$

20. $6 \cdot (-10) = \underline{-60}$

21. $-8 \cdot (-15) = \underline{120}$

22. $-20 \cdot (-5) = \underline{100}$

23. $8 \cdot (-30) = \underline{-240}$

24. $-20 \cdot 20 = \underline{-400}$

25. $-7 \cdot (-13) = \underline{91}$

26. $14 \cdot (-5) = \underline{-70}$

27. $25 \cdot 3 = \underline{75}$

28. $9 \cdot (-30) = \underline{-270}$

29. $-20 \cdot (-30) = \underline{600}$

30. $0 \cdot (-16) = \underline{0}$

Solve.

31. There was a temperature change of -2°F each hour over a period of 5 hours. In all, what was the temperature change over the 5-hour period?

$$\underline{-10^\circ\text{F}}$$

32. The price of a share of stock increased \$3 each week over a 7-week period. What was the total change in the price of a share of the stock over this period of time?

$$\underline{\$ 21}$$

TEST PREP

33. Find $-5 \cdot 3$.

- A -15
 B -2

- C 2
 D 15

Skill 6

34. Find $-8 + 20$.

- F -28
 G -12

- H 12
 J 28

Skill 4

SKILL 7: Practice

all whether the quotient is positive, negative, or 0. Then divide.

- | | | |
|--------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|
| 1. $72 \div (-8)$ <u>neg</u> $72 \div (-8) = \underline{-9}$ | 2. $-45 \div (-9)$ <u>POS:</u> $-45 \div (-9) = \underline{5}$ | 3. $35 \div 5$ <u>POS.</u> $35 \div 5 = \underline{7}$ |
| 4. $0 \div 2$ <u>0</u> $0 \div 2 = \underline{0}$ | 5. $-42 \div 7$ <u>neg</u> $-42 \div 7 = \underline{-6}$ | 6. $-36 \div (-6)$ <u>POS</u> $-36 \div (-6) = \underline{6}$ |

Divide.

- | | | |
|-------------------------------------|--------------------------------------|-------------------------------------|
| 7. $-8 \div (-4) = \underline{2}$ | 8. $-20 \div 4 = \underline{-5}$ | 9. $-6 \div 2 = \underline{-3}$ |
| 10. $-12 \div 3 = \underline{-4}$ | 11. $-5 \div 5 = \underline{-1}$ | 12. $-18 \div 3 = \underline{-6}$ |
| 13. $-45 \div (-5) = \underline{9}$ | 14. $-4 \div (-1) = \underline{4}$ | 15. $-48 \div 6 = \underline{-8}$ |
| 16. $-6 \div (-2) = \underline{3}$ | 17. $0 \div (-5) = \underline{0}$ | 18. $12 \div (-6) = \underline{-2}$ |
| 19. $56 \div 8 = \underline{7}$ | 20. $-35 \div (-7) = \underline{5}$ | 21. $48 \div (-8) = \underline{-6}$ |
| 22. $72 \div (-8) = \underline{-9}$ | 23. $-45 \div (-9) = \underline{5}$ | 24. $-35 \div 5 = \underline{-7}$ |
| 25. $-42 \div 7 = \underline{-6}$ | 26. $0 \div 2 = \underline{0}$ | 27. $-36 \div (-6) = \underline{6}$ |
| 28. $18 \div (-2) = \underline{-9}$ | 29. $-20 \div (-20) = \underline{1}$ | 30. $0 \div (-16) = \underline{0}$ |

Solve.

31. The total change in the price of a share of stock over a 5-day period was $-\$15$. If the price went down by the same amount each day, what was the change in price each day?
 $-\$3$
32. Mario's weight increased by 18 pounds over 3 years. If the increase was the same each year, how much weight did Mario gain each year?
 6 lb



33. Find $-64 \div (-8)$.
- A -8 C 6
B -6 **D 8**
- Skill 7

34. Find $6 - (-10)$.
- F -16 H 4
G -4 **J 16**
- Skill 5

SKILL 8: Practice

Key

Use integers to solve each problem.

- In January, Doreen's bank balance decreased by \$50. In February, her balance increased by \$30. What was the total change in her balance?
- Mr. Schultz wanted to write a check for \$85. He noticed that he had only \$80 in his checking account. What integer shows what Mr. Schultz's checking account balance would have been if he had written the check?
- In golf, a score of 0 is called *even par*. One *over par* is represented by +1 and one *under par* is represented by -1. In a golf competition, a player had scores of +2, +1, -2, and 0. What was the player's total score?
- Maria's score changes in a video game were +80, -90, and +40. What was the total change?
- The price of a share of stock dropped \$35 over a 5-day period. The change in price was the same on each of the 5 days. What was the change in price each day?
- On a test, the teacher gave +10 points for each correct answer, 0 points for a skipped question, and -5 points for each incorrect answer. There were 10 questions on the test. Alex had 8 correct answers and 2 incorrect answers. What score did Alex get?
- A mountain climber reached the top of a mountain that was 10,000 ft above sea level. After descending 3,400 ft, he rested for an hour. What was the level at which he rested?
- In a science experiment, the temperature of a liquid dropped 30° over 6 hours. What integer shows the average hourly temperature change of the liquid?

- \$20

- \$5

+1 out over par

+30

- \$7

+70

6,600 ft

-5°



- The temperature in Bensonville dropped 3°F each hour for 4 hours. What was the total temperature change over the 4-hour period?

Skill 8

- Find $-48 \div (-6)$.

Skill 7

F 9

H -8

G 8

J -9

A -12°F

C 7°F

B -7°F

D 12°F

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TEST PREP FOR SECTION A

Circle each correct answer.

1. What integer is the opposite of 14? *Skill 1*

- A -41 C 0
 B -14 D 41

2. Which list shows the integers -3, 7, -4, and -9 in order from least to greatest? *Skill 3*

- F -9, -4, -3, 7
 G -3, -4, -9, 7
 H -9, 7, -4, -3
 J -3, -4, 7, -9

3. Add: $7 + (-4)$. *Skill 4*

- A -11 C 3
 B -3 D 11

4. What is the value of $|-8|$? *Skill 2*

- F 8 H 0
 G 4 J -8

5. The temperature at 6 A.M. was -14°F . By 10 A.M. the temperature had increased 5°F . What was the temperature at 10 A.M.? *Skill 8*

- A 19°F C -8°F
 B 9°F D -9°F

6. Multiply: -8×9 . *Skill 6*

- F 72 H -17
 G 17 J -72

7. Divide: $-100 \div (-5)$. *Skill 7*

- A -25 C 20
 B -20 D 25

8. Write the subtraction problem $-5 - (-8)$ as an addition problem. *Skill 5*

- F $5 + 8$ H $-5 - |-8|$
 G $-5 + 8$ J $5 + (-8)$

9. Add: $-8 + (-6)$. *Skill 4*

- A -14 C 2
 B -2 D 14

10. Subtract: $-5 - (-3)$. *Skill 5*

- F 2 H 8
 G -2 J -8

11. What is the value of $|20|$? *Skill 2*

- A -40 C 0
 B -20 D 20

12. Divide $-48 \div 6$. *Skill 7*

- F -9 H 8
 G -8 J 9

13. Subtract: $4 - (-4)$. *Skill 5*

- A 0 C -8
 B 8 D 4



Mixed Review for Section A

What did the algebra teacher say when asked what she thought about negative numbers?

To find out, locate the answer to each exercise in the code. Write the letter for the exercise in the blank above the exercise number. One letter in the code is not used.

- | | | |
|-----------------------------------------------------|------------------------------------------|-------------------------------|
| 1. negative integer with absolute value 7 <u>-7</u> | 2. positive integer less than 2 <u>1</u> | 3. opposite of -3 <u>3</u> |
| 4. $8 + (-4) =$ <u>4</u> | 5. $ -6 =$ <u>6</u> | 6. $-6 \cdot 3 =$ <u>-18</u> |
| 7. $-5 - 7 =$ <u>-12</u> | 8. $5 - 7 =$ <u>-2</u> | 9. $63 \div 7 =$ <u>9</u> |
| 10. $-30 \div 5 =$ <u>-6</u> | 11. $-8 \cdot (-1) =$ <u>8</u> | 12. $-4 - (-3) =$ <u>-1</u> |
| 13. $ 10 =$ <u>10</u> | 14. $8 + (-11) =$ <u>-3</u> | 15. $9 + (-7) =$ <u>2</u> |
| 16. $-49 \div (-7) =$ <u>7</u> | 17. $5 + (-9) =$ <u>-4</u> | 18. $ -12 =$ <u>12</u> |
| 19. $56 \div (-7) =$ <u>-8</u> | 20. $-27 \div 3 =$ <u>-9</u> | 21. $70 + (-80) =$ <u>-10</u> |

| | | | | | | | | | | |
|-----|---|----|---|-----|---|---|----|----|-----|----|
| F | T | I | P | S | E | S | N | I | A | Y |
| -18 | 6 | -3 | 1 | -10 | 9 | 3 | -7 | -8 | -12 | 12 |

| | | | | | | | | | | |
|---|---|----|----|---|----|---|----|----|---|----|
| O | K | L | A | I | G | V | T | N | I | G |
| 2 | 5 | 10 | -6 | 7 | -9 | 8 | -4 | -2 | 4 | -1 |

The algebra teacher said, "I think negative numbers are

P O S I T I V E L Y
 2 15 3 4 5 16 11 9 13 18

F A S C I N A T I N G R
 6 7 21 20 19 1 10 17 14 8 12

Name _____ Date _____ Class _____

SKILL 9: Practice

Simplify.

1. $9 + 2 \cdot 3 = \underline{15}$
2. $8 + 4 \cdot (-2) = \underline{0}$
3. $7 - 24 \div 8 = \underline{4}$
4. $20 \div 2 - 24 \div 3 = \underline{2}$
5. $5 \cdot 3 + 5 \cdot 2 = \underline{25}$
6. $15 - 30 \div 5 = \underline{9}$
7. $9 + 3 \cdot 6 - 4 = \underline{23}$
8. $-4 + 6 \cdot 7 = \underline{38}$
9. $10 - 3 \cdot 5 = \underline{-5}$
10. $12 - 3 \cdot 2 + 30 = \underline{36}$
11. $-8 + 16 \div (-4) = \underline{-12}$
12. $10 - 18 \div (-2) + 4 = \underline{23}$
13. $17 - 9 \cdot 3 = \underline{-10}$
14. $1 + 3 \cdot 2 \cdot 4 = \underline{25}$
15. $8 + 3 \cdot 4 + 10 \div 5 = \underline{22}$
16. $25 + 3 \cdot 6 \div 2 = \underline{34}$
17. $3 \cdot 2 - 16 = \underline{-10}$
18. $1 - 8 \div 4 \div 2 = \underline{0}$
19. $3 + (-4) \cdot 6 = \underline{-21}$
20. $6 - 8 \div 2 - 10 = \underline{-8}$
21. $-2 + (-3) \cdot (-1) = \underline{1}$
22. $12 + 14 \div 7 = \underline{14}$
23. $19 + -3 \cdot 4 - 2 \cdot 3 = \underline{1}$
24. $20 \div 2 - 24 \div 3 = \underline{2}$

Solve.

25. The temperature was 78°F at 3 P.M. Each hour for the next 4 hours, the temperature decreased by 3°F . What was the temperature at 7 P.M.?

66°F

26. Max had a score of -700 points in a video game. On each of the next 3 plays, he gained 400 points. Then what was his score?

500



27. Simplify: $8 + 16 \div (-2)$.

Skill 9

- A 16 **C 0**
 B 12 D -12

28. Add: $23 + (-9)$.

Skill 4

- F -14 H 24
G 14 J 32



Mixed Review for Section C

When does a rational number like to have a triangle as a friend?

To find out, complete each exercise. Write the letter for each answer on the blank above the answer at the bottom of the page.

- I 1. -3.8 written as the ratio of two integers $-\frac{19}{5}$ I 2. Solution of $-3x = -18$ 6
- L 3. Standard form for $(-1)^8$ 1 I 4. Value of $-\frac{1}{3} \cdot (-\frac{1}{2})$ $\frac{1}{6}$
- T 5. Value of $-4 \div \frac{2}{3}$ -6 A 6. $(-3) \cdot (-3)$ in exponential form $(-3)^2$
- T 7. Value of $1 + (-2 + 4)^5$ 33 E 8. Solution of $\frac{x}{9} = \frac{-1}{3}$ -3
- N 9. Length of the hypotenuse of a right triangle whose legs have lengths 12 cm and 16 cm 20cm G 10. Length of the hypotenuse of a right triangle whose legs have lengths 30 cm and 40 cm 50cm
- R 11. Solution of $8x = -6$ $-\frac{3}{4}$ R 12. Value of $(-\frac{4}{5})^2$ $\frac{16}{25}$
- S 13. Value of $(-\frac{1}{5})^3$ $-\frac{1}{125}$ H 14. Value of $4\frac{1}{3} - 5\frac{1}{3}$ -1
- G 15. Value of $(-4 + 9)^3 - 25$ 100

When the

| | | | | | | | |
|-------------------------|----------------------------|--------------------------|---------------------------|---------------------------|---------------------------|----------------|----------------|
| $\frac{T}{33}$ | $\frac{R}{\frac{16}{25}}$ | $\frac{I}{6}$ | $\frac{A}{(-3)^2}$ | $\frac{N}{20 \text{ cm}}$ | $\frac{G}{50 \text{ cm}}$ | $\frac{L}{1}$ | $\frac{E}{-3}$ |
| $\frac{I}{\frac{1}{6}}$ | $\frac{S}{-\frac{1}{125}}$ | $\frac{R}{-\frac{3}{4}}$ | $\frac{I}{-\frac{19}{5}}$ | $\frac{G}{100}$ | $\frac{H}{-1}$ | $\frac{T}{-6}$ | |

SKILL 10: Practice

Write the phrase as an expression.

- 12 more than x $x+12$
- x less than 36 $36-x$
- 2 times 23 $2 \cdot 23$
- 17 times s $17 \cdot s$ or $17s$
- b multiplied by 5 $b \cdot 5$ or $5b$
- y decreased by 10 $y-10$
- 64 plus k $64+k$
- u tripled $3u$ or $3 \cdot u$
- p divided by 8 $\frac{p}{8}$ or $\frac{p}{8}$
- 18 minus x $18-x$
- 4 less than k $k-4$
- z increased by 12 $z+12$

Write an expression to answer each question.

- What is the product of 82 and g ? $82 \cdot g$ or $82g$
- What is the difference between n and 7? $n-7$ or $7-n$
- What is the quotient of 32 and x ? $32 \div x$ or $\frac{32}{x}$
- What is the sum of h and 7? $h+7$
- Carolyn makes t batches of 12 cookies. How many cookies did she make? $12 \cdot t$ or $12t$
- A jar holds n ounces of jam. How many jars are needed for 100 ounces of jam? $100 \div n$ or $\frac{100}{n}$
- Brian had p pencils. Then he bought 4 more. How many does he have now? $p+4$
- Tammy plants 6 rows of t tomato plants each. How many tomato plants did she plant? $6 \cdot t$ or $6t$

WEST PREP

21. Which expression means d less than 17?

Skill 10

- A $d-17$ C $d \div 17$
 B $17-d$ D $17 \div d$

22. Simplify: $7 \cdot 6 - 7 \cdot 2$.

Skill 9

- F 70 H 28
 G 38 J -14



SKILL 11: Practice

Evaluate each algebraic expression for the given value of the variable.

- | | |
|-------------------------------------------|----------------------------------------------|
| 1. $12 + x$ for $x = 4$ <u>16</u> | 2. $20 - k$ for $k = 9$ <u>11</u> |
| 3. $24 \div n$ for $n = 8$ <u>3</u> | 4. $6t$ for $t = 2$ <u>12</u> |
| 5. $32 - m$ for $m = -3$ <u>35</u> | 6. $h + (-10)$ for $h = 2$ <u>-8</u> |
| 7. $-3j$ for $j = 9$ <u>-27</u> | 8. $p \div (-5)$ for $p = 35$ <u>-7</u> |
| 9. $26 + 2x$ for $x = 7$ <u>40</u> | 10. $30 - 4y$ for $y = 8$ <u>-2</u> |
| 11. $20c \div 10$ for $c = 3$ <u>6</u> | 12. $-3m$ for $m = -11$ <u>33</u> |
| 13. $6 - 3f$ for $f = 6$ <u>-12</u> | 14. $2p - 14$ for $p = 13$ <u>12</u> |
| 15. $-4 + 8t$ for $t = -5$ <u>-44</u> | 16. $100 \div j$ for $j = 5$ <u>20</u> |
| 17. $3k - 8k$ for $k = 16$ <u>-80</u> | 18. $-3m + 15 - m$ for $m = 25$ <u>-85</u> |
| 19. $64g \div 8$ for $g = -7$ <u>-56</u> | 20. $200 + k \div 9$ for $k = 63$ <u>207</u> |
| 1. $2y + 8$ for $y = -3$ <u>2</u> | 22. $18 - 3m$ for $m = -1$ <u>21</u> |
| 23. $\frac{6}{2n}$ for $n = -3$ <u>-1</u> | 24. $9z + 2z$ for $z = -2$ <u>-22</u> |

Solve.

25. Mark drives $65t$ miles in t hours. How far does he drive in 2 hours? 130 mi
26. Josefina spent $20 + 3b$ dollars on a pair of earrings and three blouses that cost b dollars each. How much did she spend in all if each blouse cost \$15? \$65



27. Evaluate $9 + x$ for $x = -3$. Skill 11
- A -27 **C 6**
 B -12 D 12

28. Doug bought a book for d dollars and a poster for \$8. What expression represents how much he spent? Skill 10
- F** $8 + d$ H $8d$
 G $d - 8$ J $8 \div d$

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NAME _____ Date _____ Class _____

SKILL 12: Practice

Simplify each expression.

- | | |
|--------------------------------------------------|-----------------------------------------------------|
| 1. $7(3 + 5) = \underline{56}$ | 2. $(16 + 4) \div 5 = \underline{4}$ |
| 3. $(-2)(3 + 8) = \underline{-22}$ | 4. $(-3 + 9) \div 2 = \underline{3}$ |
| 5. $(6 + 4)(2 + 3) = \underline{50}$ | 6. $3(2 \cdot 5 - 7) = \underline{9}$ |
| 7. $(12 \cdot 3 - 1) \div 5 = \underline{7}$ | 8. $(-8 - 22) \div 10 = \underline{-3}$ |
| 9. $(-2 + 6)(5 - 8) = \underline{-12}$ | 10. $(13 - 6)(13 - 7) = \underline{42}$ |
| 11. $(6 - 13)(7 - 13) = \underline{42}$ | 12. $18 \div (4 + 5) = \underline{2}$ |
| 13. $36 \div (2 - 8) = \underline{-6}$ | 14. $60(8 - 12 + 2) = \underline{-120}$ |
| 15. $48 \div (2 - 8 \cdot 1) = \underline{-8}$ | 16. $(-9)(15 - 5) = \underline{-90}$ |
| 17. $54 \div (7 - 13) = \underline{-9}$ | 18. $1 + (3 - 9) + 8 = \underline{3}$ |
| 19. $(14 + 10) \div (2 - 6) = \underline{-6}$ | 20. $(4 - 7)(2 + 9) = \underline{-33}$ |
| 21. $(7 - 6) + (2 - 3 \cdot 4) = \underline{-9}$ | 22. $9 \div (-2 - 1) = \underline{-3}$ |
| 23. $16 - (5 - 8) = \underline{19}$ | 24. $(2 \cdot 6 - 4) \div (4 - 8) = \underline{-2}$ |

Solve.

25. The high temperature on Monday was 78°F . The high temperature on Tuesday and Wednesday was 81°F . Evaluate $(78 + 2 \cdot 81) \div 3$ to find the average high temperature for the 3 days.

80°F

26. Harry made deposits of \$55 and \$35 in his bank account. He wrote checks for \$20 and \$35. Evaluate $(55 + 35) - (20 + 35)$ to find the change in his bank account balance.

$\$35$



27. Evaluate: $2(8 - 12)$.

A 8 C -4
B 4 **D -8**

Skill 12

28. Evaluate $7m$ for $m = -2$.

F -14 H 5
G -5 J 14

Skill 11

SKILL 13: Practice

Solve each equation.

1. $x + 6 = 14$
 $x = \underline{8}$

2. $x + 9 = 19$
 $x = \underline{10}$

3. $x - 3 = 7$
 $x = \underline{10}$

4. $2x = 18$
 $x = \underline{9}$

5. $\frac{n}{5} = 9$
 $n = \underline{45}$

6. $(-4)x = 20$
 $x = \underline{-5}$

7. $m - 10 = -6$
 $m = \underline{4}$

8. $\frac{k}{-8} = 6$
 $k = \underline{-48}$

9. $10x = -70$
 $x = \underline{-7}$

10. $n - (-8) = 15$
 $n = \underline{7}$

11. $-4x = -60$
 $x = \underline{15}$

12. $8p = -96$
 $p = \underline{-12}$

13. $\frac{n}{-11} = 8$
 $n = \underline{-88}$

14. $x + (-6) = 9$
 $x = \underline{15}$

15. $-7k = -63$
 $k = \underline{9}$

16. $x + 23 = 37$
 $x = \underline{14}$

17. $x - 13 = -28$
 $x = \underline{-15}$

18. $\frac{m}{-9} = 20$
 $m = \underline{-180}$

19. $\frac{k}{-6} = -12$
 $k = \underline{72}$

20. $12y = -84$
 $y = \underline{-7}$

21. $m + (-15) = 30$
 $m = \underline{45}$

22. $x - (-13) = 2$
 $x = \underline{-11}$

23. $\frac{n}{3} = -14$
 $n = \underline{-42}$

24. $-8x = -168$
 $x = \underline{21}$

Solve.

25. In a video game, Charles scored
- -250
- points on his second play. This brought his total score to
- 500
- . What was his score on the first play?

750 points

26. Each day for several days, the change in the price of a share of stock was
- $-\$3$
- . The total change in price during those days was
- $-\$36$
- . Over how many days did the price decline?

12 days

27. What is the solution of
- $4x = -28$
- ?
-
- Skill 13

A 24
B -7C -24
D -32

28. Evaluate:
- $-4(9 + 5)$
- .

F 56
G 41H -41
J -56

Skill 12

SKILL 14: Practice

To solve each equation, tell what you will do first to both sides.

1. $2x + 7 = 13$

Sub. 7

2. $-3n - 8 = 7$

Add 8

3. $2x - 9 = 11$

Add 9

4. $-5x + 6 = 36$

Sub 6

5. $10x + (-9) = 21$

Sub. -9

6. $4x - 13 = 3$

Add 13

7. $-5m + 12 = -9$

Sub 12

8. $8k - 11 = 13$

Add 11

9. $-6n - (-2) = 8$

Add -2

Solve each equation. Check your solutions.

10. $3b + (-7) = -25$

$b = \underline{-6}$

11. $\frac{n}{-4} + (-3) = 8$

$n = \underline{-44}$

12. $16 = 4h - 12$

$h = \underline{7}$

13. $\frac{x}{6} - (-10) = 3$

$x = \underline{-42}$

14. $8w - 17 = -89$

$w = \underline{-9}$

15. $\frac{c}{7} - 12 = -4$

$c = \underline{56}$

16. $\frac{p}{-5} + 12 = 20$

$p = \underline{-40}$

17. $5j + (-16) = -76$

$j = \underline{-12}$

18. $\frac{k}{-3} + (-8) = -8$

$k = \underline{0}$

For each problem, write an equation. Then solve.

19. Linda had \$15 in her coin bank. On her birthday, 5 relatives sent her money as a birthday gift. Each relative sent the same amount. She then had \$115. How much money did Linda receive from each relative?

$\$15 + 5x = \115 $x = \$20$

20. Gorillas and chimpanzees can learn sign language to communicate with humans. By 1982, a gorilla named Koko had learned 700 words. This is 50 fewer than 5 times as many words as a chimpanzee named Washoe knew 10 years earlier. How many words did Washoe know?

$5x - 50 = 700$ $x = 150$ words



21. Solve: $4x - 8 = 32$.

- (A) 10
- B 8

- C 6
- D -6

Skill 14

22. Solve: $n + 15 = 22$.

- F -8
- G -7

- (H) 7
- J 17

Skill 13



TEST PREP FOR SECTION B

Circle each correct answer.

1. Evaluate $30 - 2k$ for $k = -8$.

- A 46 C 20
 B 40 D 14

Skill 11

2. Simplify: $6 - 21 \div 3$.

- F 45 H -1
 G 1 J -45

Skill 9

3. Solve: $-5m = 45$.

- A -40 C 9
 B -9 D 40

Skill 13

4. Write an expression to answer:
What is the sum of h and 73?

- F $73h$ H $h + 73$
 G $73 - h$ J $h \cdot 73$

Skill 10

5. Simplify: $60 \div (2 + 4)$.

- A 10 C 45
 B 34 D 55

Skill 12

6. Solve: $\frac{m}{4} + 10 = 7$.

- F -68 H 12
 G -12 J 68

Skill 14

7. Simplify: $2(8 - 2 \cdot 4)$.

- A 8 C 0
 B 48 D 56

Skill 12

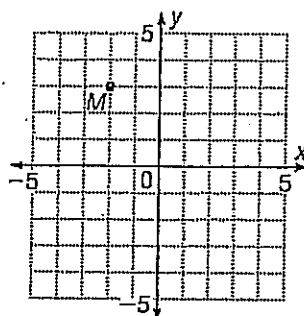
8. Solve: $x - 5 = -10$.

- F -5 H 5
 G -15 J 15

Skill 13

9. What are the coordinates of
point M ?

Skill 15



- A $(-3, 2)$ C $(-2, -3)$
 B $(-3, -2)$ D $(-2, 3)$

10. Simplify: $(8 + 12) \div (-3 + 1)$.

Skill 12

- F 10 H -5
 G 5 J -10

11. Write an expression to answer:
What is -19 decreased by y ?

Skill 10

- A $y - (-19)$ C $-19 \div y$
 B $-19 - y$ D $y \div (-19)$

12. Solve: $-4w + 6 = 46$.

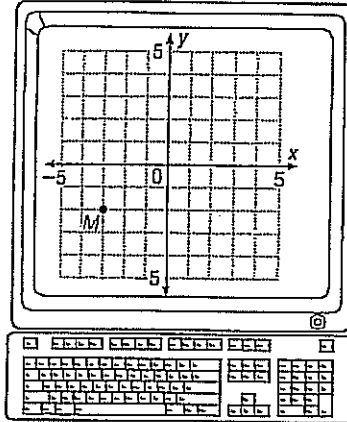
Skill 14

- F -13 H 10
 G -10 J 13



Mixed Review for Section B

One day, a complicated equation, struggling to find its solution, decided to visit a computer. The computer operated on the equation and found the solution rather quickly. How did the computer describe the look on the face of the equation after it was all over?



To find out, answer each exercise.

Write the circled code letter on the blank above the answer at the bottom of the page. Use the computer screen diagram for Exercises 5 and 15.

1. Solution of $b - 50 = 101$
151 (S)
2. Value of $6 + 5x$ for $x = -2$
-4 (I)
3. Solution of $8k = -96$
-12 (E)
4. Value of $7 \cdot (-9) + 9 \div 3 \cdot 4$
-51 (O)
5. Ordered pair for point M
(-3, -2) (A)
6. Value of $\frac{r}{3}$ for $r = 90$
30 (E)
7. Expression for 43 less than n
 $n - 43$ (D)
8. Value of $4(-12 + 7 \cdot 3)$
36 (P)
9. Solution of $10k + 12 = 32$
2 (E)
10. Value of $5(3 \cdot 8 - 30)$
-30 (D)
11. Solution of $\frac{m}{-16} = -9$
144 (X)
12. Solution of $-11w + 6 = -38$
4 (S)
13. Value of $9 - 2 \cdot 8$
-7 (R)
14. Expression for 50 more than h
 $h + 50$ (Z)
15. Letter formed by joining $(-1, 2)$ to $(1, -2)$ and $(-1, -2)$ to $(1, 2)$
X (N)

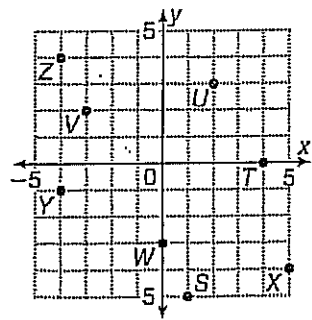
D A Z E D
 $n - 43$ $(-3, -2)$ $h + 50$ 2 -30

E X P R E S S I O N
 -12 144 36 -7 30 4 151 -4 -51 X

SKILL 15: Practice

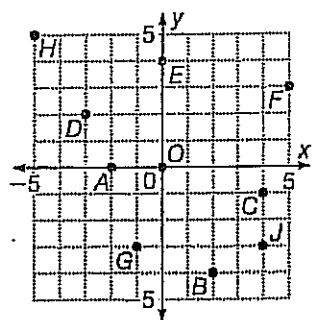
Find the coordinates of each point.

- | | |
|----------------------|---------------------|
| 1. S <u>(1, -5)</u> | 2. T <u>(4, 0)</u> |
| 3. U <u>(2, 3)</u> | 4. V <u>(-3, 2)</u> |
| 5. W <u>(0, -3)</u> | 6. X <u>(5, -4)</u> |
| 7. Y <u>(-4, -1)</u> | 8. Z <u>(-4, 4)</u> |



Name the point that has the given coordinates.

- | | |
|----------------------|-----------------------|
| 9. (2, -4) <u>B</u> | 10. (0, 4) <u>E</u> |
| 11. (-3, 2) <u>D</u> | 12. (0, 0) <u>O</u> |
| 13. (-2, 0) <u>A</u> | 14. (-1, -3) <u>G</u> |
| 15. (5, 3) <u>F</u> | 16. (4, -1) <u>C</u> |
| 17. (-5, 5) <u>H</u> | 18. (4, -3) <u>J</u> |



Solve.

19. A city with streets that run north/south and east/west uses coordinates to identify locations of buildings. The unit of length is 1 city block. How many blocks must a taxi driver travel to get from a bus stop at (2, 5) to a house at (17, 25)?

35 blocks



20. What are the coordinates of a point in the coordinate plane that is 2 units to the right of the origin and 7 units down?

Skill 15

- | | |
|------------|------------------|
| A (-2, -7) | C (2, -7) |
| B (-2, 7) | D (2, 7) |

21. Solve: $6x + 5 = -13$.

Skill 14

- | | |
|-------------|------|
| F -18 | H 3 |
| G -3 | J 18 |

SKILL 16: Practice

Write each rational number as a ratio of two integers.

$$1. -3\frac{3}{4} \xrightarrow{-15} \frac{-15}{4}$$

$$2. 1\frac{6}{7} \xrightarrow{13} \frac{13}{7}$$

$$3. -0.8 \xrightarrow{-4} \frac{-4}{5}$$

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

$$5. -4\frac{2}{5} \xrightarrow{-22} \frac{-22}{5}$$

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

$$7. 0.55 \xrightarrow{11} \frac{11}{20}$$

$$8. -1.\bar{3} \xrightarrow{-4} \frac{-4}{3}$$

$$9. 8\frac{2}{3} \xrightarrow{26} \frac{26}{3}$$

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

$$10. \frac{2}{9} \bigcirc \frac{1}{4}$$

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

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

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

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

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

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

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

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

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

$$20. 0.7 \bigcirc -0.9$$

$$21. 0 \bigcirc -0.3$$

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

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

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

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

$$26. -\frac{16}{9} \bigcirc -\frac{14}{3}$$

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

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?

Tuesday

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

Berta



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

A $-\frac{1}{3}$

C $-\frac{4}{5}$

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

D -1

Skill 16

31. Find $-7 + 18$.

F -25

G -11

H 11

J 25

Skill 4

SKILL 17: Practice

Add or subtract. Write fractions in simplest form.

- | | | |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1. $8.3 + (-4.1) =$ <u>4.2</u> | 2. $6 - 9.2 =$ <u>-3.2</u> | 3. $-7.69 - 14.8 =$ <u>-22.49</u> |
| 4. $\frac{3}{5} + \frac{1}{5} =$ <u>$\frac{4}{5}$</u> | 5. $-\frac{15}{11} - \frac{7}{11} =$ <u>$-\frac{22}{11}$</u> | 6. $-\frac{1}{8} + \frac{3}{8} =$ <u>$\frac{2}{8}$</u> |
| 7. $\frac{5}{12} - \frac{7}{12} =$ <u>$-\frac{2}{12}$</u> | 8. $-\frac{11}{15} + \frac{7}{15} =$ <u>$-\frac{4}{15}$</u> | 9. $-\frac{3}{4} - (-5\frac{3}{4}) =$ <u>5</u> |
| 10. $8\frac{1}{3} - 9\frac{2}{3} =$ <u>$-1\frac{1}{3}$</u> | 11. $4\frac{5}{6} - 2\frac{1}{6} =$ <u>$2\frac{4}{6}$</u> | 12. $\frac{5}{12} + (-7\frac{11}{12}) =$ <u>$-7\frac{6}{12}$</u> |

Multiply or divide. Write fractions in simplest form.

- | | | |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 13. $9.16 \cdot (-0.2) =$ <u>-1.832</u> | 14. $7.03 \cdot 0.04 =$ <u>.2812</u> | 15. $-0.1 \cdot (-4.1) =$ <u>.41</u> |
| 16. $-8.64 \div 2 =$ <u>-4.32</u> | 17. $90.5 \div (-5) =$ <u>-18.1</u> | 18. $-6.4 \div (-0.8) =$ <u>8</u> |
| 19. $\frac{1}{2} \cdot (-4) =$ <u>-2</u> | 20. $-\frac{2}{3} \cdot (-3) =$ <u>2</u> | 21. $-\frac{1}{2} \cdot \frac{3}{4} =$ <u>$-\frac{3}{8}$</u> |
| 22. $1\frac{1}{2} \div (-8) =$ <u>$-\frac{3}{16}$</u> | 23. $3\frac{1}{2} \div 7 =$ <u>$\frac{7}{2}$</u> | 24. $-7.5 \div 3 =$ <u>-2.5</u> |
| 25. $-\frac{3}{8} \cdot (-\frac{5}{6}) =$ <u>$\frac{5}{16}$</u> | 26. $-\frac{3}{5} \div (-\frac{7}{8}) =$ <u>$\frac{24}{35}$</u> | 27. $\frac{4}{5} \cdot (-5) =$ <u>-4</u> |

Solve.

28. The area of Colombia is about $1\frac{1}{4}$ times the area of Venezuela, which is about 352,000 square miles. What is the area of Colombia?

$$\frac{440,000 \text{ sq mi}}{1\frac{1}{4}}$$

29. Miguel bought some stock priced at $14\frac{3}{8}$ per share. Find the value of the stock after it went up $2\frac{3}{4}$.

$$17\frac{1}{8}$$



30. Add: $\frac{-2}{3} + \frac{1}{3}$.

- A 1 **C** $-\frac{1}{3}$
 B $\frac{1}{3}$ D -1

Skill 17

31. Which rational number is greater than $-\frac{3}{5}$?

- F $-\frac{16}{20}$ **H** $-\frac{9}{15}$
 G $-\frac{10}{15}$ **J** $-\frac{2}{15}$

Skill 16

SKILL 18: Practice

Solve each equation. Check your solution.

1. $x + \frac{5}{7} = \frac{6}{7}$

$x = \frac{1}{7}$

2. $x - \frac{1}{8} = -\frac{5}{8}$

$x = -\frac{1}{2}$

3. $6m = -\frac{1}{2}$

$m = -\frac{1}{12}$

4. $k + 4\frac{1}{2} = 3\frac{1}{2}$

$k = -1$

5. $\frac{n}{-4} = \frac{1}{2}$

$n = -2$

6. $y - \frac{5}{8} = -\frac{3}{8}$

$y = \frac{1}{4}$

7. $-3y = \frac{5}{8}$

$y = -\frac{5}{24}$

8. $10x = -7$

$x = -\frac{7}{10}$

9. $m + 9 = -11$

$m = -20$

10. $t + (-1\frac{1}{2}) = -6\frac{1}{2}$

$t = -5$

11. $j - (-4\frac{1}{3}) = -10$

$j = -14\frac{1}{3}$

12. $2k = \frac{1}{8}$

$k = \frac{1}{16}$

13. $x - 3.2 = -20.8$

$x = -17.6$

14. $-0.25x = 2$

$x = -8$

15. $\frac{5}{16}n = -10$

$n = -32$

16. $-\frac{4}{5}m = 6$

$m = -7\frac{1}{2}$

17. $\frac{8}{9}t = -\frac{1}{3}$

$t = -\frac{3}{8}$

18. $y + 1\frac{1}{4} = 7\frac{1}{4}$

$y = 6$

19. $-\frac{1}{4}j = \frac{2}{3}$

$j = -2\frac{2}{3}$

20. $-0.01k = 0.8$

$k = -80$

21. $-6t = 6.6$

$t = -1.1$

Solve.

22. The price of a share of stock changed by
- $-\$19.20$
- over a 5-day period. What was the average daily change in the price of a share of the stock?

$-\$3.84$

23. Janice plans to save
- $\$22.50$
- each week until she has enough money to buy a
- $\$180$
- bicycle. After how many weeks will she have enough money for the bicycle?

8 weeks

24. Solve
- $2x = -8.4$
- .

A -16.8

C 4.2

B -4.2

D -42

Skill 18

25. Multiply:
- $-\frac{3}{4} \cdot (-\frac{2}{3})$
- .

F $\frac{1}{2}$

H $-\frac{1}{2}$

G $-\frac{5}{12}$

J $1\frac{1}{8}$

Skill 17

SKILL 19: Practice

Write using exponents.

1. $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$ 3^6

2. $10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10$ 10^7

3. $(-4) \cdot (-4) \cdot (-4)$ $(-4)^3$

4. $(-8) \cdot (-8) \cdot (-8) \cdot (-8)$ $(-8)^4$

5. $9 \cdot 9$ 9^2

6. $(-1) \cdot (-1) \cdot (-1)$ $(-1)^3$

Write in expanded form.

7. 1.9^4 $1.9 \cdot 1.9 \cdot 1.9 \cdot 1.9$

8. $(-0.6)^3$ $(-0.6) \cdot (-0.6) \cdot (-0.6)$

9. 20^5 $20 \cdot 20 \cdot 20 \cdot 20 \cdot 20$

10. $(-\frac{2}{3})^3$ $(-\frac{2}{3}) \cdot (-\frac{2}{3}) \cdot (-\frac{2}{3})$

11. 2^6 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

12. $(-4)^4$ $(-4) \cdot (-4) \cdot (-4) \cdot (-4)$

Write in standard form.

13. 4^3 64

14. 5^4 625

15. 10^2 100

16. 10^5 100,000

17. $(-2)^5$ -32

18. $(-3)^4$ 81

19. 20^3 8,000

20. $(-1)^4$ 1

21. 30^5 24,300,000

22. $(0.02)^3$.00008

23. 45^2 2,025

24. $(0.1)^4$.0001

Find each square root.

25. $\sqrt{144}$ 12

26. $\sqrt{81}$ 9

27. $\sqrt{361}$ 19

28. $\sqrt{169}$ 13

29. $\sqrt{225}$ 15

30. $\sqrt{256}$ 16

Solve.

31. Suppose you toss a penny, a nickel, a dime, and a quarter at the same time and record the heads and tails. There are 2^4 ways the coins can land. Write this number in standard form. 16

32. Suppose you roll 3 dice of different colors and record what number you get for each color. There are 6^3 number combinations possible. Write this number in standard form. 216



33. What is $(-2)^4$ in standard form?

Skill 19

A -8

C 8

B -16

D 16

34. Solve: $x + 2.5 = 1.5$.

Skill 18

F -4

H 4

G -1

J 3

SKILL 20: Practice

Evaluate each expression.

1. $(4 + 6)^3 = \underline{1000}$

2. $(-8 + 5)^2 = \underline{9}$

3. $4 + 6^3 = \underline{220}$

4. $1 + 5^3 = \underline{126}$

5. $40 + 3 \cdot 2^2 = \underline{52}$

6. $16 - 7 \cdot 2^3 = \underline{-40}$

7. $(12 - 5)^3 = \underline{343}$

8. $(16 - 7) \cdot 2^3 = \underline{72}$

9. $(2 + 3)^2 - 7 = \underline{18}$

10. $(16 - 7 \cdot 2)^3 = \underline{8}$

11. $48 + (-2)^3 = \underline{40}$

12. $(2^3 + 4^2) \div 4 = \underline{6}$

13. $(1 + 6)^2 \cdot 3 = \underline{147}$

14. $2^3 + 4^2 \div 4 = \underline{12}$

15. $(3 + 3^2) \div 3 = \underline{4}$

16. $2^5 - 1 = \underline{31}$

Evaluate each expression. Use the given value for each variable.

17. $41 + m^2$ for $m = 3$ 50

18. $(17 - k)^3$ for $k = 12$ 125

19. $(x + 4)^2$ for $x = 8$ 144

20. $(5 + 2n)^5$ for $n = -2$ 1

Solve.

21. A company plans to assign a 5-digit ID number to each employee. The first digit will never be 0. The expression $9 \cdot 10^4$ represents the number of possible ID numbers. How many ID numbers are possible?

90,000

22. If you have two dice of different colors, there are $6^2 - 6$ ways to roll two different numbers. In how many ways can you roll two different numbers?

30



23. Evaluate $(1 + 3 \cdot 2)^2$.

- A 13
- B 37
- C 49
- D 56

Skill 20

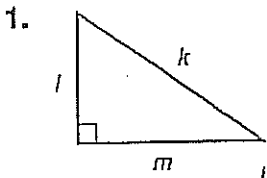
24. What is the standard form for $(-2)^3$?

- F -6
- G -8
- H 6
- J 8

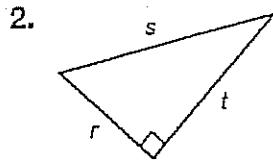
Skill 19

SKILL 21: Practice

Name the hypotenuse and legs of each right triangle.

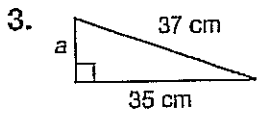


Hypotenuse: K
Legs: l and m

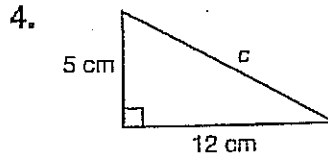


Hypotenuse: S
Legs: r and t

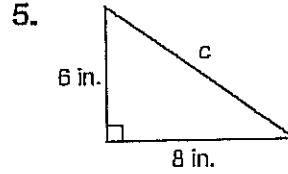
Find the missing length in each right triangle.



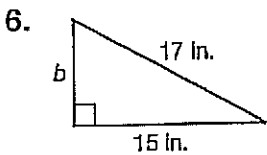
$a = \underline{12 \text{ cm}}$



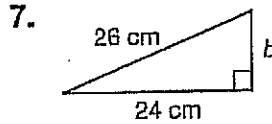
$c = \underline{13 \text{ cm}}$



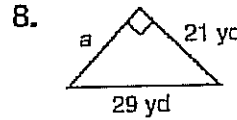
$c = \underline{10 \text{ in}}$



$b = \underline{8 \text{ in}}$

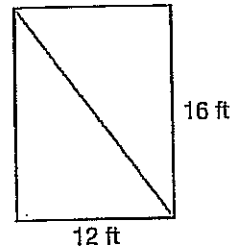


$b = \underline{10 \text{ cm}}$



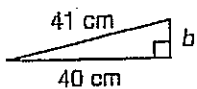
$a = \underline{20 \text{ yd}}$

9. A courtyard that is 12 feet by 16 feet has a diagonal walkway. What is the length of the walkway? 20 Ft



10. What is the length of side b of the right triangle?

Skill 21



- A 1 cm C 9 cm
B 7 cm D 11 cm

11. Evaluate $4 + x^2$ for $x = 8$.

Skill 20

- F 60 H 68
G 20 J 144



TEST PREP FOR SECTION C

Circle each correct answer.

1. Find $\frac{1}{4} + (-\frac{3}{4})$ in simplest form. Skill 17

- A $-\frac{1}{2}$ C 1
 B -1 D $\frac{1}{2}$

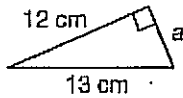
2. Evaluate $(5 - 3x)^2$ for $x = -5$. Skill 20

- F -400 H 100
 G -100 J 400

3. What is $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$ in exponential form? Skill 19

- A 5^6 C $5 \cdot 6$
 B 6^5 D $6 \cdot 5$

4. Find the missing length in the right triangle. Skill 21



- E 1 cm H 294 cm
 G 5 cm J 25 cm

5. Which number is less than -8? Skill 16

- A $-8\frac{1}{4}$ C $-6\frac{1}{2}$
 B $-7\frac{9}{10}$ D 7

6. Solve: $3x = -\frac{1}{2}$. Skill 18

- F $-1\frac{1}{2}$ H $\frac{1}{6}$
 G $-\frac{1}{6}$ J $\frac{2}{3}$

7. What is 100^2 in standard form? Skill 19

- A 200 C 10,000
 B 1,000 D 20,000

8. Find $-\frac{5}{6} + \frac{1}{6}$ in simplest form. Skill 17

- F 1 H $-\frac{2}{3}$
 G $\frac{2}{3}$ J $-\frac{5}{12}$

9. Solve: $m - \frac{5}{6} = -2$. Skill 18

- A $2\frac{5}{6}$ C $-1\frac{1}{6}$
 B $1\frac{1}{6}$ D $-2\frac{5}{6}$

10. Evaluate $1 + (1 - x)^3$ for $x = 2$. Skill 20

- F -6 H 2
 G 0 J 8

11. The temperature fell 12.5°F over a 5-hour period. The temperature change was the same for each of these hours. What was the temperature change each hour? Skill 17

- A -2.5°F C 2.5°F
 B -25°F D 60°F

12. Find $\sqrt{49}$. Skill 19

- F 2,401 H 7
 G 98 J 9



Mixed Review for Section C



When does a rational number like to have a triangle as a friend?

To find out, complete each exercise. Write the letter for each answer on the blank above the answer at the bottom of the page.

I 1. -3.8 written as the ratio of two integers $-\frac{19}{5}$

I 2. Solution of $-3x = -18$ 6

L 3. Standard form for $(-1)^0$ 1

I 4. Value of $-\frac{1}{3} \cdot (-\frac{1}{2})$ $\frac{1}{6}$

T 5. Value of $-4 \div \frac{2}{3}$ -6

A 6. $(-3) \cdot (-3)$ in exponential form $(-3)^2$

T 7. Value of $1 + (-2 + 4)^5$ 33

E 8. Solution of $\frac{x}{9} = \frac{-1}{3}$ -3

N 9. Length of the hypotenuse of a right triangle whose legs have lengths 12 cm and 16 cm 20cm

G 10. Length of the hypotenuse of a right triangle whose legs have lengths 30 cm and 40 cm 50cm

R 11. Solution of $8x = -6$ $-\frac{3}{4}$

R 12. Value of $(-\frac{4}{5})^2$ $\frac{16}{25}$

S 13. Value of $(-\frac{1}{5})^3$ $-\frac{1}{125}$

H 14. Value of $4\frac{1}{3} - 5\frac{1}{3}$ -1

G 15. Value of $(-4 + 9)^3 - 25$ 100

When the

| | | | | | | | |
|-------------------------|----------------------------|--------------------------|---------------------------|---------------------------|---------------------------|----------------|----------------|
| $\frac{T}{33}$ | $\frac{R}{\frac{16}{25}}$ | $\frac{I}{6}$ | $\frac{A}{(-3)^2}$ | $\frac{N}{20 \text{ cm}}$ | $\frac{G}{50 \text{ cm}}$ | $\frac{L}{1}$ | $\frac{E}{-3}$ |
| $\frac{I}{\frac{1}{6}}$ | $\frac{S}{-\frac{1}{125}}$ | $\frac{R}{-\frac{3}{4}}$ | $\frac{I}{-\frac{19}{5}}$ | $\frac{G}{100}$ | $\frac{H}{-1}$ | $\frac{T}{-6}$ | |

