

Fractions Worksheet

1 a. $\frac{10}{9} - \frac{3}{7} =$

1 b. $\frac{7}{5} - \frac{1}{11} =$

2 a. $\frac{11}{2} - \frac{6}{10} =$

2 b. $\frac{7}{2} - \frac{2}{3} =$

3 a. $\frac{11}{3} - \frac{5}{2} =$

3 b. $\frac{9}{11} - \frac{1}{8} =$

4 a. $\frac{7}{2} - \frac{3}{11} =$

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

5 a. $\frac{5}{10} - \frac{2}{10} =$

5 b. $\frac{11}{9} - \frac{1}{9} =$

6 a. $\frac{9}{6} - \frac{3}{10} =$

6 b. $\frac{9}{2} - \frac{1}{4} =$

Multiplying and Dividing Fractions (G)

Find the value of each expression in lowest terms.

1. $\frac{8}{3} \div \frac{4}{3}$

6. $\frac{1}{5} \div \frac{7}{8}$

11. $\frac{1}{5} \times \frac{9}{5}$

2. $\frac{17}{3} \div \frac{12}{5}$

7. $\frac{1}{2} \div \frac{11}{6}$

12. $\frac{5}{6} \div \frac{5}{4}$

3. $\frac{7}{6} \div \frac{5}{4}$

8. $\frac{6}{11} \div \frac{12}{5}$

13. $\frac{1}{5} \div \frac{8}{9}$

4. $\frac{1}{3} \div \frac{10}{3}$

9. $\frac{5}{4} \div \frac{11}{3}$

14. $\frac{13}{2} \times \frac{4}{5}$

5. $\frac{7}{5} \times \frac{10}{9}$

10. $\frac{6}{5} \times \frac{1}{5}$

15. $\frac{1}{10} \div \frac{21}{5}$

Multiplying and Dividing Fractions (H)

Find the value of each expression in lowest terms.

1. $\frac{9}{2} \div \frac{16}{5}$

6. $\frac{17}{2} \div \frac{5}{2}$

11. $\frac{1}{7} \times \frac{7}{2}$

2. $\frac{1}{2} \times \frac{2}{9}$

7. $\frac{14}{5} \div \frac{7}{2}$

12. $\frac{15}{8} \times \frac{1}{2}$

3. $\frac{9}{11} \times \frac{5}{4}$

8. $\frac{5}{4} \times \frac{7}{12}$

13. $\frac{9}{5} \times \frac{7}{4}$

4. $\frac{1}{2} \div \frac{21}{8}$

9. $\frac{3}{2} \div \frac{5}{4}$

14. $\frac{5}{6} \div \frac{7}{6}$

5. $\frac{11}{10} \times \frac{5}{6}$

10. $\frac{2}{3} \times \frac{16}{9}$

15. $\frac{4}{11} \times \frac{1}{4}$

Multiplying Fractions (B)

Find the value of each expression.

1. $\frac{7}{9} \times \frac{5}{4}$

5. $\frac{11}{2} \times \frac{1}{7}$

9. $\frac{4}{3} \times \frac{1}{5}$

2. $\frac{7}{9} \times \frac{1}{2}$

6. $\frac{1}{7} \times \frac{11}{5}$

10. $\frac{1}{5} \times \frac{11}{5}$

3. $\frac{16}{7} \times \frac{1}{3}$

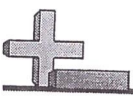
7. $\frac{4}{5} \times \frac{2}{3}$

11. $\frac{1}{3} \times \frac{7}{11}$

4. $\frac{1}{5} \times \frac{3}{4}$

8. $\frac{7}{9} \times \frac{1}{2}$

12. $\frac{16}{7} \times \frac{1}{5}$



Solve each problem. Write your answer as a mixed number (if possible).

Answers

- 1) An adult turtle weighed $3\frac{3}{4}$ ounces. How much would 3 adult turtles weigh?
- 2) A new washing machine used $3\frac{2}{4}$ gallons of water per full load to clean clothes. If John washed $2\frac{2}{3}$ loads of clothes, how many gallons of water would be used?
- 3) On Halloween 4 friends each received $\frac{4}{5}$ of a pound of candy. How much candy did they receive total?
- 4) On Monday Ned picked up $\frac{3}{9}$ of a pound of cans to recycle. On Tuesday he picked up $\frac{3}{4}$ that amount. How many pounds did Ned pick up on Tuesday?
- 5) An old wooden post was $4\frac{3}{5}$ feet long. If you were to cut off $\frac{1}{6}$ of it, how much would you have cut off?
- 6) A restaurant had 2 full boxes of spoons and $\frac{5}{8}$ of a box. If each full box weighed 3 kilograms, what is the combined weight of the boxes the restaurant has?
- 7) A batch of chicken required $2\frac{1}{3}$ cups of flour. If a fast food restaurant was making $4\frac{1}{3}$ batches, how much flour would they need?
- 8) A water pitcher could hold $\frac{1}{2}$ of a gallon of water. If Paul filled up 4 pitchers, how much water would he have?
- 9) Will picked $\frac{2}{4}$ a pound of apples, but $\frac{2}{3}$ of them were bad. Of the apples Will picked, how many pounds were bad?
- 10) A full tub of water weighed $3\frac{1}{8}$ pounds. If the tub were filled up only $\frac{2}{7}$ full, how much would it weigh?
- 11) A box of pencils weighed $4\frac{2}{5}$ ounces. If a principal ordered 3 boxes, how much would they weigh?
- 12) A bottle of home-made cleaning solution took $2\frac{1}{5}$ milliliters of lemon juice. If Megan wanted to make $2\frac{1}{4}$ bottles, how many milliliters of lemon juice would she need?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Probability

Key Words

experimental
probability
probability
theoretical
probability

Probability is a number from 0 to 1 that shows the likelihood that an event will occur. A probability close to 0 means an event is unlikely, and a probability close to 1 means it is very likely. A probability close to $\frac{1}{2}$ means an event is neither likely nor unlikely.

The **theoretical probability** of an event A occurring is found as follows:

$$P(A) = \frac{\text{favorable outcomes}}{\text{total possible outcomes}}$$

A theoretical probability allows us to predict how many times an event would likely occur in a certain number of trials. Just multiply the theoretical probability by the number of trials.

Since we do not live in a perfect world, your prediction may be close to, but not exactly equal to, your results. The actual outcomes can be used to determine the **experimental probability** that event A will occur, as follows:

$$P_e(A) = \frac{\text{times event occurs}}{\text{total trials}}$$

The more times you perform an experiment, the closer the experimental probability should get to the theoretical probability.

Example

A CD has only 1 pop song and 12 classic rock songs on it. What is the probability that a song selected at random will be a pop song? Determine if the event is likely, unlikely, or neither.

There is 1 pop song.

There are a total of $1 + 12$, or 13, songs on the CD.

$$\text{So, } P(\text{pop}) = \frac{\text{favorable outcomes}}{\text{total possible outcomes}} = \frac{1}{13}$$

$\frac{1}{13}$ is close to 0.

So, the event is unlikely.

The theoretical probability of choosing a pop song is $\frac{1}{13}$, and the event is unlikely.

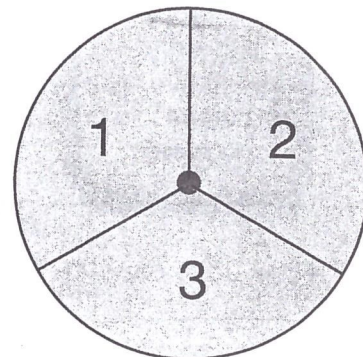
APPLY

Suppose you roll a number cube with faces numbered 1 to 6. What is the probability of the cube landing on a number less than 7?

Guided Practice

- 1 This spinner is divided into three congruent sections. What is the experimental probability of spinning a 2?

Step 1 Place a paper clip over the center of the spinner, hold it in place with the point of a pencil, and flick the paperclip to spin it. Do this 15 times. Record your results in the tally chart.



Number	Tallies	Times Spun
1		5
2		4
3		6

Step 2 Find the experimental probability of spinning a 2.

How many times did you spin a 2? 4

$$P_e(2) = \frac{\text{times event occurs}}{\text{total trials}} = \frac{4}{15}$$

My experimental probability of spinning a 2 was 4.

THINK

To record the experimental probability, look at the chart to see how many times the event happened. Then write that number over the total number of trials, 15.

- 2 Compare your experimental probability to the theoretical probability of spinning a 2.

Step 1 Find the theoretical probability of spinning a 2.

There is 1 favorable outcome (spinning a 2).

There are 3 possible outcomes: spinning a 1, 2, or 3.

$$P(2) = \frac{\text{favorable outcomes}}{\text{total possible outcomes}} = \frac{1}{3}$$

Step 2 Compare the two probabilities.

experimental probability: $\frac{4}{15}$

theoretical probability: $\frac{1}{3}$

The experimental probability that I found is less than the theoretical probability.

REMEMBER

Since you only performed 15 trials, it is reasonable if your experimental probability is different from the theoretical probability.

Independent Practice

1. What is theoretical probability?

2. How does experimental probability differ from theoretical probability?

Ask Yourself

How many outcomes are favorable?

How many total possible outcomes are there?

Gillian places the cards below in a bag, shakes the bag, and draws one card at random. Use this diagram for questions 3 through 5.



3. What is the theoretical probability that Gillian will draw the letter *N*?

4. What is the theoretical probability that Gillian will draw the letter *T*?

5. Which best describes the probability that Gillian will draw a vowel (*A*, *E*, *I*, *O*, or *U*)—likely, unlikely, or neither? Why?

Solve.

6. If you flip a fair coin 50 times, how many times would you expect it to land on heads? Show or explain how you found your answer.



has a bag of marbles. Each marble is either blue, red, or yellow. She reaches the bag, draws a marble, records its color in the table below, and replaces it in the bag. She does this 80 times. Use this information for questions 7 and 8.

What is the experimental probability of choosing each type of marble?

$P_e(\text{blue})$: _____ $P_e(\text{red})$: _____ $P_e(\text{yellow})$: _____

Color	Times Picked
Blue	49
Red	8
Yellow	23

Do the outcomes appear to be equally likely to one another? Explain.

Solve each problem.

9. There are 12 girls and 14 boys in Lilly's class. She is the only girl named Lilly. If each student's name is placed in a hat and a name is drawn at random, what is the probability that a girl's name will be chosen? That Lilly's name will be chosen?

$P(\text{girl})$: _____ $P(\text{Lilly})$: _____

10. Jayden tosses a number cube, with faces numbered 1 to 6. If Jayden does this 120 times, how many times would you expect the cube to land on a number less than 3?

11. A spinner is divided into four congruent sections, some shaded and some unshaded. Max spun the spinner 100 times and recorded his results in the table.

Section	Times Spun
Shaded	73
Unshaded	27

Based on these results, decide how many of the spinner sections you would expect to be shaded and how many you would expect to be unshaded. Explain your choices.



Solve each problem.

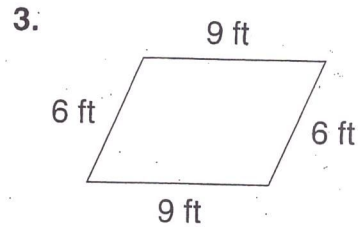
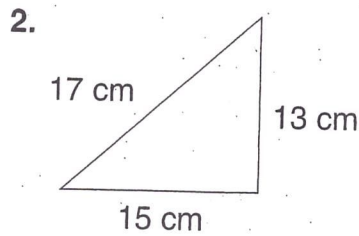
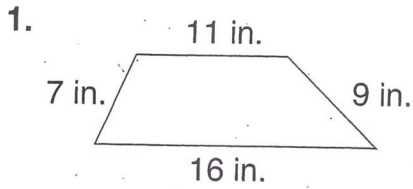
- 1) A vendor sold 64 hotdogs during a football game. If the ratio of hotdogs to hamburgers sold was $8 : 1$, how many hamburgers did the vendor sell?
- 2) During a class election the ratio of students who voted for candidate A compared to candidate B was $10 : 7$. If candidate A received 50 votes, what is the combined amount of votes candidate A and candidate B received?
- 3) During a class election 12 people voted for candidate A. If there were 42 votes total, what is the ratio of votes for candidate B compared to candidate A?
- 4) Will was playing checkers with a friend. The ratio of games Will won was $3 : 1$. If Will won 9 games, how many games did his friend win?
- 5) While completing a race, Edward spent 54 minutes walking. If his ratio of time walking to jogging was $6 : 5$, how many minutes did he spend completing the race?
- 6) A box of candy has 21 pieces total. If 7 of the pieces are cherry flavored, what is the ratio of other flavors to cherry flavored pieces?
- 7) A classroom had 24 glue sticks. If the ratio of glue sticks to glue bottles was $4 : 3$, how many glue bottles did the classroom have?
- 8) A chess player won 90 of the games he played. If his ratio of wins to loses was $10 : 3$, how many games did he play total?
- 9) At a bake sale there were 90 items sold total. If 42 of the items sold were cookies and the rest were brownies what is the ratio of brownies sold to cookies sold?
- 10) At summer camp the ratio of boys to girls was $7 : 4$. If there were 63 boys, how many girls were there?

Answers

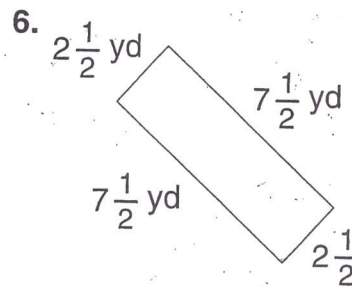
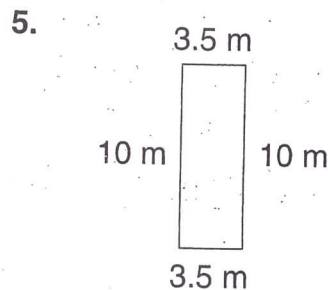
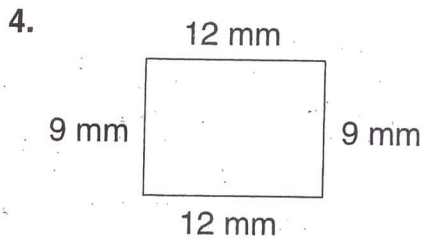
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10. _____

LESSON **Practice**
9-2 **Perimeter and Circumference**

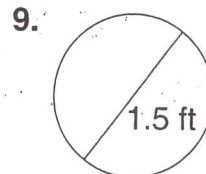
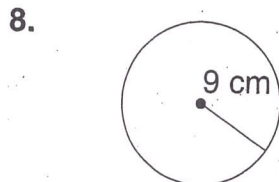
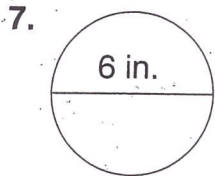
Find the perimeter of each polygon.



Find the perimeter of each rectangle.



Find the circumference of each circle to the nearest tenth.
 Use 3.14 for π or $\frac{22}{7}$.



10. A circular swimming pool is 21 feet in diameter. What is the circumference of the swimming pool? Use $\frac{22}{7}$ for π .

11. A jar lid has a diameter of 42 millimeters. What is the circumference of the lid? Use $\frac{22}{7}$ for π .

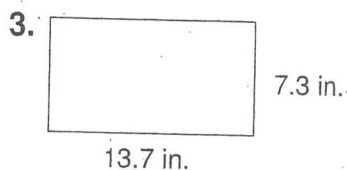
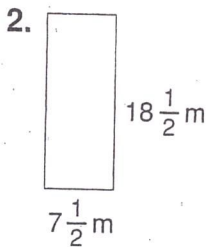
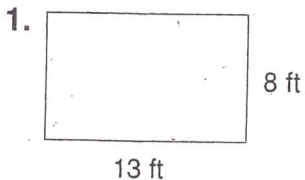
12. A frying pan has a radius of 14 centimeters. What is the circumference of the frying pan? Use $\frac{22}{7}$ for π .

LESSON

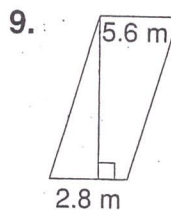
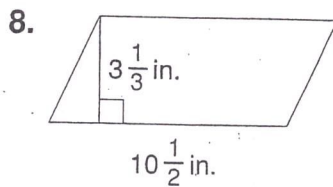
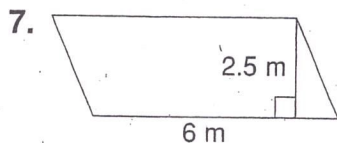
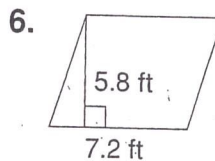
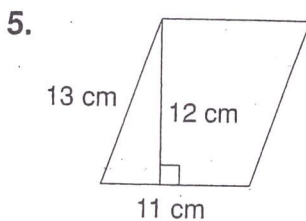
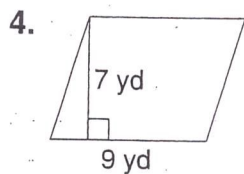
Practice

9-3 Area of Parallelograms

Find the area of each rectangle.



Find the area of each parallelogram.



10. A dollar bill is 15.5 cm long and 6.5 cm wide. What is the area of a dollar bill?

11. A rectangular hallway has an area of 70 ft^2 . The width of the hallway is 4 feet. What is the length of the hallway?

LESSON

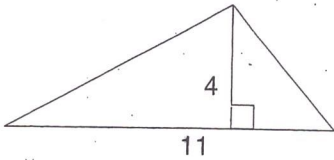
9-4

Practice

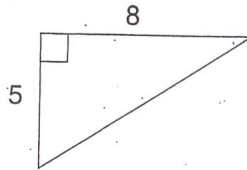
Area of Triangles and Trapezoids

Find the area of each triangle.

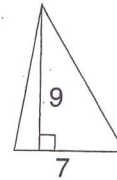
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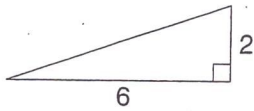
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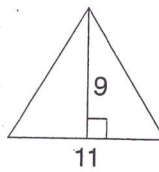
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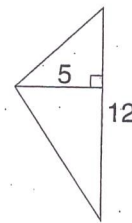
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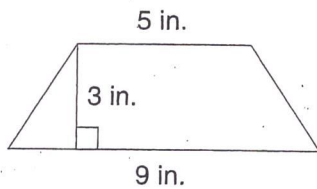


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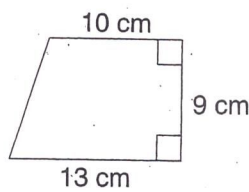


Find the area of each trapezoid.

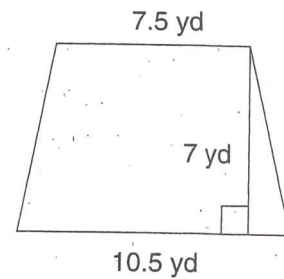
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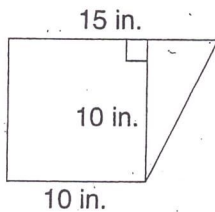
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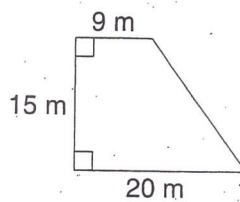
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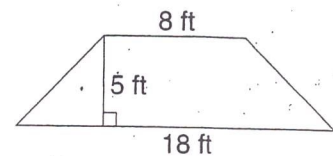
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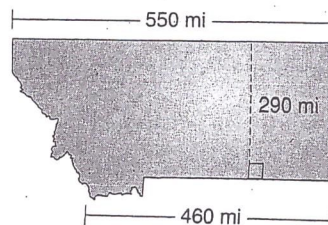
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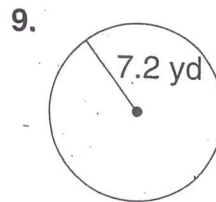
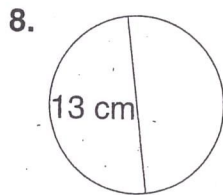
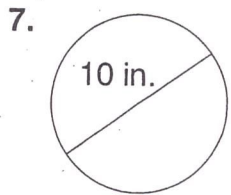
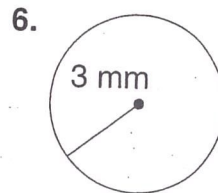
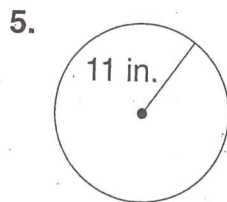
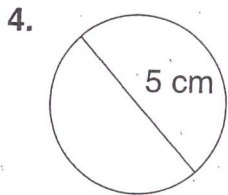
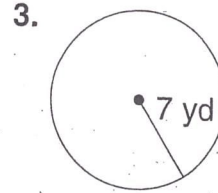
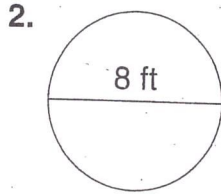
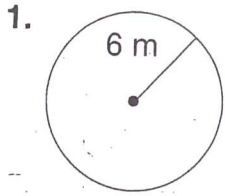


13. The state of Montana is shaped somewhat like a trapezoid. What is the approximate area of Montana?



LESSON
9-5 **Practice**
Area of Circles

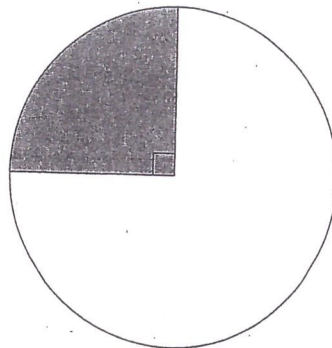
Find the area of each circle to the nearest tenth. Use 3.14 for π .



10. A Susan B. Anthony dollar coin has a diameter of 26.50 millimeters. What is the area of the coin to the nearest hundredth?

11. A tablecloth for a round table has a radius of 21 inches. What is the area of the tablecloth? Use $\frac{22}{7}$ for π .

12. Use a centimeter ruler to measure the radius of the circle. Then find the area of the shaded region of the circle. Use 3.14 for π . Round your answer to the nearest tenth.



Name : _____ Score : _____

Teacher : _____ Date : _____

Convert Between Fractions and Decimals Numbers.

1) $\frac{1}{3} =$

11) $0.5 =$

2) $\frac{4}{5} =$

12) $0.667 =$

3) $\frac{1}{3} =$

13) $0.625 =$

4) $\frac{8}{10} =$

14) $0.8 =$

5) $\frac{3}{10} =$

15) $0.3 =$

6) $\frac{3}{4} =$

16) $0.6 =$

7) $\frac{2}{5} =$

17) $0.375 =$

8) $\frac{3}{6} =$

18) $0.8 =$

9) $\frac{2}{4} =$

19) $0.333 =$

10) $\frac{5}{6} =$

20) $0.25 =$

LESSON
1-5 **Practice**
Subtracting Integers

Subtract.

- | | | | |
|-----------------------|------------------------|--------------------------|----------------------------|
| 1. $8 - 2$
_____ | 2. $10 - 5$
_____ | 3. $7 - 12$
_____ | 4. $16 - 10$
_____ |
| 5. $3 - 10$
_____ | 6. $16 - 9$
_____ | 7. $-4 - 9$
_____ | 8. $-8 - 10$
_____ |
| 9. $33 - 57$
_____ | 10. $16 - 49$
_____ | 11. $-114 - 19$
_____ | 12. $-88 - (-10)$
_____ |

Evaluate each expression for the given value of the variable.

- | | | |
|--|---------------------------------------|---------------------------------------|
| 13. $x - 8$ for $x = 10$
_____ | 14. $w - 10$ for $w = 15$
_____ | 15. $15 - w$ for $w = 8$
_____ |
| 16. $12 - t$ for $t = -8$
_____ | 17. $15 - x$ for $x = -12$
_____ | 18. $w - 20$ for $w = -15$
_____ |
| 19. $-15 - x$ for $x = -10$
_____ | 20. $-9 - x$ for $x = -20$
_____ | 21. $-11 - d$ for $d = -15$
_____ |
| 22. $y - (-10)$ for $y = -10$
_____ | 23. $x - (-15)$ for $x = -5$
_____ | 24. $a - (-12)$ for $a = 10$
_____ |

25. The altitude of Mt. Blackburn in Alaska is 16,390 feet. The altitude of Mt. Elbert in Colorado is 14,433 feet. What is the difference in the altitudes of the two mountains?

26. In January, Jesse weighed 230 pounds. By November, he weighed 185 pounds. How much did Jesse's weight change?
