

Name \_\_\_\_\_

# Estimating Sums and Differences

**Estimate:**  $7.382 + 4.97$ 

1. Round each number to the nearest whole number.

$$\begin{array}{r} 7.382 + 4.97 \\ \downarrow \quad \downarrow \\ 7 + 5 \end{array}$$

2. Add to estimate:

$$\begin{array}{l} 7 + 5 = 12 \\ 7.382 + 4.97 \approx 12 \end{array}$$

$\approx$  is used to show that this is an estimate.

**Estimate:**  $12.57 - 6.806$ 

1. Round each number to the nearest whole number.

$$\begin{array}{r} 12.57 - 6.806 \\ \downarrow \quad \downarrow \\ 13 - 7 \end{array}$$

2. Subtract to estimate.

$$\begin{array}{l} 13 - 7 = 6 \\ 12.57 - 6.806 \approx 6 \end{array}$$

You can also round the numbers to any decimal place. Estimate the sum. Round to the nearest tenth.

$$3.947 + 11.286$$

$$\begin{array}{r} \downarrow \quad \downarrow \\ 3.9 + 11.3 = 15.2, \text{ so } 3.947 + 11.286 \approx 15.2 \end{array}$$

Round each number to the nearest whole number to estimate the answer.

1.  $4.38 + 9.179$  13      2.  $62.873 - 12.7$  50      3.  $52.83 + 97.288$  150  
 4.  $131.049 - 82.604$  48      5.  $79.14 + 32.546$  112      6.  $48.468 + 63.029$  111  
 7.  $112.658 - 81.903$  31      8.  $586.735 - 204.63$  382      9.  $107.139 + 90.621$  198

Round each number to the nearest tenth to estimate the answer.

10.  $17.058 - 8.623$  8.5      11.  $38.8314 + 15.62$  54.4      12.  $26.429 - 6.703$  19.7  
 13.  $238.562 - 104.387$  134.2      14.  $400.628 + 291.037$  691.6      15.  $76.451 - 68.399$  8.1

16. **Geometry** The area of the Davis's living room is 18.087 square yards, and their bedroom has an area of 15.78 square yards. Round to the nearest tenth and estimate the amount of carpet they need to buy.

**33.9 sq yd**

17. **Explain It** Angela has a \$5-bill, two \$10-bills, and a \$20-bill. She wants to buy a DVD for \$17.89, a pin for \$5.12, and shoes for \$12.99. Estimate the sum to the nearest dollar. Tell which bills she should hand to the cashier.

**\$18 + \$5 + \$13 = \$36. She should give the**

**cashier a \$20-bill and 2 \$10-bills.**

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# Estimating Sums and Differences

Fill in the blanks to complete the estimate.

1.  $4.36 - 2.971 =$   
4 - 3 = 1

2.  $9.384 + 7.713 =$   
9 + 8 = 17

3.  $8.81 + 2.78 =$   
8.8 + 2.8 = 11.6

Round each number to the nearest whole number to estimate the answer.

4.  $15.63 - 8.497$  8

5.  $3.504 + 7.118$  11

6.  $13.09 - 10.902$  2

7.  $14.52 + 11.118$  26

8.  $9.573 - 4.817$  5

9.  $22.174 + 18.561$  41

10.  $37.624 - 14.826$  23

11.  $15.938 + 7.627$  24

12.  $19.394 - 6.943$  12

Round each number to the nearest tenth to estimate the answer.

13.  $7.349 + 8.192$  15.5

14.  $14.087 - 5.418$  8.7

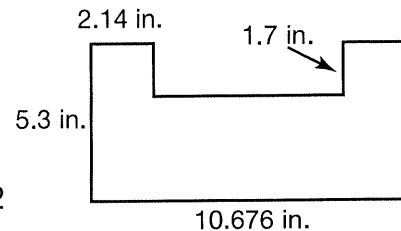
15.  $8.991 + 3.475$  12.5

16.  $25.183 - 13.984$  11.2

17.  $11.004 + 5.391$  16.4

18.  $31.038 - 12.861$  18.1

19. **Geometry** Estimate the perimeter of the figure to the nearest whole number. 36 in.



20. Four runners ran the relay. Bill ran his lap in 22.738 seconds, Tory ran in 21.874 seconds, Grace ran in 20.32 seconds, and Jessica ran in 19.047 seconds. Estimate the team's total time to the nearest tenth of a second.

83.9 s

21. LuWanda bought a jar of mustard, a half-gallon of ice cream, and two boxes of popcorn. She gave the clerk a \$20 bill. Estimate how many dollars she received in change.

On Sale Today	
Mustard . . . .	\$1.58
Ice cream . . .	\$3.27
Popcorn . . . .	\$2.19

A \$4

B \$9

**C** \$11

D \$14

22. **Writing to Explain** The digit 5 is usually rounded up, but it can also be rounded down. How would you round the numbers in the equation  $9.5 + 4.7 + 3.2 + 7.5 = x$  to the nearest whole number without getting an overestimate or an underestimate?

I would round one of the .5s up and round the other down, which will balance the rounding. 9.5 rounds to 10, 4.7 rounds to 5, 3.2 rounds to 3, and 7.5 rounds to 7.  $10 + 5 + 3 + 7 = 25$

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# Camping Trip

Alayna and two of her friends are going on a camping trip. They need to purchase some camping equipment. Use the price list to help them decide what they should buy.

## Decision Making

Price List

Item	Price
Tent	\$179.50
Camp stove	\$57.85
Lantern	\$29.95
Flashlight	\$18.35
Cooler	\$34.75
Sleeping bag	\$52.90
Radio	\$31.15
Dish set	\$25.65

1. Alayna and her friends must buy a tent, but the other items on the list are optional. What is the greatest amount they can spend if they buy a tent and 3 other different items?

$$\begin{aligned} &\underline{\text{Tent: } \$179.50 +} \\ &\underline{\text{stove: } \$57.85 +} \\ &\underline{\text{sleeping bag:}} \\ &\underline{\$52.90 + \text{cooler:}} \\ &\underline{\$34.75 = \$325.00} \end{aligned}$$

2. The campers have saved \$415.00. Can they afford to buy 1 of each item on the price list?

**No, 1 of each item would cost \$430.10.**

3. If Alayna and her friends have \$350.00, can they afford to buy a tent and 3 sleeping bags?

**Yes, 1 tent + 3 sleeping bags = \$338.20.**

4. The 3 campers each received \$25.00 gift certificates to help pay for their equipment purchases. Which 2 different items can they buy that will come closest to the total gift certificate amount without going over?

**Sleeping bag: \$52.90 + flashlight:**  
**\$18.35 = \$71.25**

5. If the tent was on sale for \$159.50, would the answer for Exercise 2 change? Explain.

**Sample answer: Yes. The campers would have enough to buy 1 of each item if the tent was \$20.00 less.**

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# Evaluating Addition and Subtraction Expressions

Find  $1.093 + 41.6$ .

Estimate: Round 1.093 to 1 and 41.6 to 42.

$$1 + 42 = 43$$

Write the numbers, lining up the decimal points. Annex zeros so all numbers have the same number of decimal places.

$$\begin{array}{r} 1.093 \\ +41.600 \leftarrow \text{Annex 2 zeros.} \\ \hline 42.693 \end{array}$$

Add the numbers. Regroup if necessary. Write the decimal point in your answer.

42.693 is close to 43, so the answer is reasonable.

Find  $18.5 - g$  when  $g = 7.82$ .

Estimate: Round 7.82 to 8.

$$18.5 - 8 = 10.5$$

Write the numbers, lining up the decimal points. Annex zeros so all numbers have the same number of decimal places.

$$\begin{array}{r} 18.50 \leftarrow \text{Annex a zero.} \\ - 7.82 \\ \hline 10.68 \end{array}$$

Subtract. Regroup if necessary. Write the decimal point in your answer.

10.68 is close to 10.5, so the answer is reasonable.

Use substitution to evaluate each expression.

1.  $45.6 + 26.3$

71.9

2.  $n - 5.14; n = 14.25$

9.11

3.  $17.2 + 6.08$

23.28

4.  $24.84 - h; h = 22.7$

2.14

5.  $13.64 - 8.3$

5.34

6.  $r + 15.9; r = 0.214$

16.114

7.  $3.652 - a; a = 1.41$

2.242

8.  $18.06 + 9.798$

27.858

9.  $t - 6.38; t = 8.006$

1.626

10. **Reasonableness** Jaime wrote  $4.4 - 0.33 = 1.1$ . Is his answer reasonable? Why or why not?

**Sample answer:** An estimate shows that

$4.4 - 0.3 = 4.1$ , so his answer is not

reasonable.

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# Evaluating Addition and Subtraction Expressions

Evaluate each expression.

1.  $10.21 - 4.6$

**5.61**

2.  $b + 1.85; b = 0.03$

**1.88**

3.  $5.011 + x; x = 1.23$

**6.241**

4.  $22.9 - k; k = 0.61$

**22.29**

5.  $m - 1.26; m = 9.834$

**8.574**

6.  $24 + 7.45$

**31.45**

7. Complete the sequence of numbers. 4.25, 5, 5.75, 6.5, 7.25

8. **Number Sense** How does the cost for 1 tube of glue compare to the cost for 1 roll of tape?

**The tube of glue costs \$0.40 more.**

9. What is the difference in cost between 2 packs of markers and 4 sheets of poster board?

**\$3.84**

Craft Supplies	
Poster board	\$1.29/sheet
Markers	\$4.50/pack
Tape	\$1.99/roll
Glue	\$2.39/tube
Construction paper	\$3.79/pack

10. In a long jump competition, Khaila jumped 3.9 meters. Alicia jumped 3.08 meters. How much farther did Khaila jump?

A 0.01 meter

**B 0.82 meter**

C 0.98 meter

D 1.01 meters

11. **Writing to Explain** Trey wrote  $9.009 - 0.01 = 9.008$ . Is his answer correct? Why or why not?

**Sample answer: No. The decimals must be lined up when subtracting. The correct answer is 8.999.**

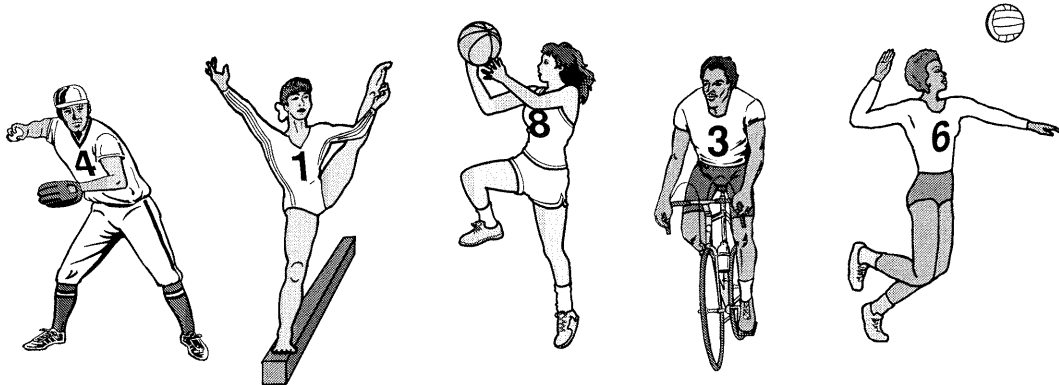
Name \_\_\_\_\_

Enrichment

**4-2**

# The Order Matters

Write a five-digit number(s) that fits each description. Use only the digits that the athletes are wearing. Use each digit only once in each answer. **Number Sense**



1. Find the greatest number less than 1.81.

1.6843

2. Find the number that is one one-thousandth greater than 3.1638.

3.1648

3. Find the least number greater than 4.5.

4.6138

4. Find the greatest number with 8 in the ten-thousandths place and 3 in the hundredths place.

6.4318

5. Find the least number with 1 in the ones place and 6 in the thousandths place.

1.3468

6. Find the number closest to 57.92.

61.348

7. Find the greatest number less than 50.

48.631

8. Find all of the numbers between 6.129 and 6.381. Order them from least to greatest.

6.1348, 6.1384, 6.1438, 6.1483, 6.1834,

6.1843, 6.3148, 6.3184, 6.3418, 6.3481

9. Find all of the numbers with 4 in the ones place and 8 in the ten-thousandths place.

4.1368, 4.1638, 4.3168, 4.3618, 4.6138, 4.6318

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# Solving Addition and Subtraction Equations

You can solve equations by getting the variable alone. You can use inverse relationships and the properties of equality to get the variable alone. Remember that you need to do the same thing to both sides of the equation to keep the equation equal.

Solve the equation  $5.2 + c = 13.6$ .

To get  $c$  alone, undo adding 5.2 by subtracting 5.2 from both sides.

$$\begin{aligned} 5.2 + c &= 13.6 \\ 5.2 + c - \mathbf{5.2} &= 13.6 - \mathbf{5.2} \\ c &= 8.4 \end{aligned}$$

Check your solution by substituting 8.4 for  $c$  in the equation.

$$\begin{aligned} 5.2 + c &= 13.6 \\ 5.2 + 8.4 &= 13.6 \\ 13.6 &= 13.6 \quad \text{It checks.} \end{aligned}$$

Solve the equation  $x - 2.4 = 16.1$ .

To get  $x$  alone, undo subtracting 2.4 by adding 2.4 to both sides.

$$\begin{aligned} x - 2.4 &= 16.1 \\ x - 2.4 + \mathbf{2.4} &= 16.1 + \mathbf{2.4} \\ x &= 18.5 \end{aligned}$$

Check your solution by substituting 18.5 for  $x$  in the equation.

$$\begin{aligned} x - 2.4 &= 16.1 \\ 18.5 - 2.4 &= 16.1 \\ 16.1 &= 16.1 \quad \text{It checks.} \end{aligned}$$

Explain how to get the variable alone in each equation.

1.  $x + 11.4 = 25$   
 $x + 11.4 - \mathbf{11.4} = 25 - \mathbf{11.4}$

**Subtract 11.4 from each side.**

2.  $n - 19.1 = 12.4$   
 $n - 19.1 + \mathbf{19.1} = 12.4 + \mathbf{19.1}$

**Add 19.1 to each side.**

Solve each equation and check your answer. Show your work.

3.  $g - 21.3 = 48.4$

$$g - 21.3 + \mathbf{21.3} = 48.4 + \mathbf{21.3}$$

$$g = \mathbf{69.7}$$

4.  $y + 7.7 = 21$

$$y + 7.7 - 7.7 = 21 - 7.7$$

$$y = \mathbf{13.3}$$

5. The Olympic triathlon is 51.5 km. A contestant has completed two of the three legs of the race and has traveled 41.5 km. Solve  $41.5 + d = 51.5$  to find the distance of the third leg.

$$\mathbf{41.5 + d = 51.5; 41.5 + d - 41.5 = 51.5 - 41.5;}$$

$$\mathbf{d = 10; The third leg is 10 km.}$$

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# Solving Addition and Subtraction Equations

Explain how to get the variable alone in each equation.

1.  $n + 1.1 = 22.3$

$$n + 1.1 - 1.1 = 22.3 - 1.1$$

**Subtract 1.1 from each side.**

2.  $x - 6.7 = 28.8$

$$x - 6.7 + \underline{\hspace{1cm}} = 28.8 + \underline{\hspace{1cm}}$$

**Add 6.7 to each side.**

3.  $g - 3.2 = 20$

$$g = 23.2$$

4.  $31.7 + y = 54.4$

$$y = 22.7$$

5.  $r + 16.9 = 88.2$

$$r = 71.3$$

6.  $3.9 = m - 22.1$

$$m = 26$$

7.  $100 = e + 91.8$

$$e = 8.2$$

8.  $a - 31 = 12.6$

$$a = 43.6$$

9. Tom drove 11.8 miles in the morning. He drove more in the afternoon. He drove 32.4 miles in all. Which equation could you use to find how far Tom drove in the afternoon?

A  $11.8 + 32.4 = m$

B  $11.8 + m = 32.4$

C  $11.8 - m = 32.4$

D  $m - 32.4 = 11.8$

10. **Critical Thinking** If  $n + 10 = 45.5$ , then what is the value of the expression  $n - 25$ ?

A 10.5

B 25

C 25.5

D 45.5

11. **Writing to Explain** Explain how to solve the equation  $4.8 + p = 12.2$ . Then solve.

**Subtract 4.8 from each side.  $4.8 + p - 4.8 =$**

$$12.2 - 4.8; p = 7.4$$



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Enrichment

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# The Fraction Game

Three friends are playing a fraction game. Each player picks two fraction cards. On odd hands, players find the sum of the two cards. On even hands, players find the difference of the two cards. The player with the greatest answer wins the hand.

**Number Sense**

The first three hands of the game are shown below. Rewrite each fraction, using the least common denominator. Then write the sum or difference in simplest form. Find which player won each hand and write the letter in the box.

1. **Player A** **Player B** **Player C** **Winner?**

$$1\frac{1}{3}$$

$$2\frac{1}{6}$$

$$3\frac{1}{4}$$

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

$$2\frac{1}{2}$$

$$\frac{5}{6}$$

$$\boxed{\text{A}}$$

$$1\frac{2}{6} + 2\frac{1}{6} = 3\frac{1}{2} \quad 3\frac{2}{8} + \frac{1}{8} = 3\frac{3}{8} \quad 2\frac{3}{6} + \frac{5}{6} = 3\frac{1}{3}$$

2. **Player A** **Player B** **Player C** **Winner?**

$$7\frac{1}{10}$$

$$4\frac{1}{2}$$

$$6\frac{7}{8}$$

$$2\frac{1}{3}$$

$$5\frac{4}{7}$$

$$1\frac{1}{4}$$

$$\boxed{\text{B}}$$

$$7\frac{1}{10} - 4\frac{5}{10} = 2\frac{3}{5} \quad 6\frac{21}{24} - 2\frac{8}{24} = 4\frac{13}{24} \quad 5\frac{16}{28} - 1\frac{7}{28} = 4\frac{9}{28}$$

3. **Player A** **Player B** **Player C** **Winner?**

$$\frac{7}{10}$$

$$4\frac{1}{4}$$

$$3\frac{5}{8}$$

$$1\frac{1}{6}$$

$$2\frac{4}{13}$$

$$2\frac{19}{26}$$

$$\boxed{\text{C}}$$

$$\frac{14}{20} + 4\frac{5}{20} = 4\frac{19}{20} \quad 3\frac{15}{24} + 1\frac{4}{24} = 4\frac{19}{24} \quad 2\frac{8}{26} + 2\frac{19}{26} = 5\frac{1}{26}$$

# Estimating Products

You can use rounding or compatible numbers to estimate products.

**Rounding:**

Round each factor to the nearest whole number and multiply.

$$\begin{array}{r} 4.287 \longrightarrow 4 \\ \times 2.804 \longrightarrow \times 3 \\ \hline 12 \end{array} \text{ so, } 4.287 \times 2.804 \approx 12$$

**Compatible Numbers:**

Find compatible numbers and multiply.

$$\begin{array}{r} 16.173 \times 3.45 \\ \downarrow \quad \downarrow \\ 15 \times 3 = 45 \end{array} \text{ so } 16.173 \times 3.45 \approx 45$$

Use rounding to estimate each product.

1.  $3.73 \times 8.16$

2.  $35.518 \times 9.722$

3.  $7.349 \times 5.62$

**$4 \times 8 = 32$**

**$36 \times 10 = 360$**

**$7 \times 6 = 42$**

4.  $4.178 \times 12.513$

5.  $8.498 \times 5.602$

6.  $24.534 \times 7.96$

**$4 \times 13 = 52$**

**$8 \times 6 = 48$**

**$25 \times 8 = 200$**

7.  $41.01 \times 4.88$

8.  $15.812 \times 9.47$

9.  $2.81 \times 17.638$

**$41 \times 5 = 205$**

**$16 \times 9 = 144$**

**$3 \times 18 = 54$**

Use compatible numbers to estimate each product.

10.  $55.93 \times 8.34$

11.  $61.438 \times 8.72$

12.  $122.899 \times 5.36$

**$60 \times 8 = 480$**

**$60 \times 9 = 540$**

**$125 \times 5 = 625$**

13.  $16.954 \times 3.5$

14.  $17.158 \times 8.99$

15.  $38.753 \times 8.461$

**$17 \times 4 = 68$**

**$17 \times 10 = 170$**

**$40 \times 8 = 320$**

16.  $73.724 \times 20.1$

17.  $79.48 \times 8.512$

18.  $43.518 \times 18.043$

**$75 \times 20 = 1,500$**

**$80 \times 9 = 720$**

**$45 \times 20 = 900$**

19. **Writing to Explain** Elena used rounding to estimate  $7.864 \times 3.29 \approx 24$ .

Peter used rounding to estimate  $7.864 \times 3.29 \approx 32$ . Which student is correct? What mistake was made?

**Elena is correct. 7.864 rounds to 8; 3.29 rounds to 3;  $8 \times 3 = 24$ . Peter rounded 3.29 to 4.**

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# Estimating Products

Estimate each answer using rounding.

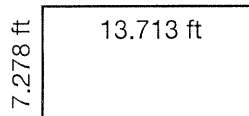
1.  $3.48 \times 9.673$  30      2.  $5.702 \times 4.26$  24      3.  $9.734 \times 6.8$  70  
 4.  $8.37 \times 2.501$  24      5.  $7.936 \times 2.491$  16      6.  $5.092 \times 3.774$  20  
 7.  $12.123 \times 4.802$  60      8.  $6.98 \times 8.502$  63      9.  $1.948 \times 3.728$  8

Estimate each answer using compatible numbers. **Sample answers given**

10.  $19.18 \times 3.7$       11.  $14.9 \times 8.432$       12.  $31.047 \times 5.492$   
 $20 \times 4 = 80$        $15 \times 8 = 120$        $30 \times 5 = 150$   
 13.  $16.07 \times 4.989$       14.  $48.614 \times 9.01$       15.  $61.503 \times 8.041$   
 $16 \times 5 = 80$        $50 \times 9 = 450$        $60 \times 8 = 480$   
 16.  $7.196 \times 10.93$       17.  $103.82 \times 25.9$       18.  $81.431 \times 6.73$   
 $7 \times 11 = 77$        $100 \times 25 = 2,500$        $80 \times 7 = 560$

19. **Number Sense** An airliner is 9.34 feet wide. The airline wants to install 5 seats in each row. The seats are each 1.46 feet wide. Rounded to the nearest tenth, about how much space would be left for the aisle? 2 ft

20. **Geometry** Estimate the area of the rectangle. 98 sq ft



21. **Writing to Explain** The library has a bookshelf 46.725 inches wide for their new encyclopedia. When the encyclopedia arrived, the librarian found that each of the 24 volumes was 1.65 inches wide. Estimate if the 24 books will fit on the shelf. How does your rounding affect the answer?

1.65 rounds to 2;  $2 \times 24 = 48$ ; The books will not fit on the shelf. I rounded up and the difference between the width of the shelf and the width of the books isn't very much. They might fit on the shelf.

22. **Algebra** Dominick wants to buy 2 CDs for \$14.95 each, 3 DVDs for \$19.99 each, and a video game for \$36.79. Which equation could you use to estimate how much money he needs?

- A  $15 + 20 + 26 = x$       C  $2(15) + 3(20) + 37 = x$   
 B  $2(14) + 3(20) + 36 = x$       D  $2(15) + 3(19) + 36 = x$

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# Craft Store

Geno saw a craft store advertisement in the newspaper showing the following sale items.

## Reasoning

### Art's Crafts

Item	Regular Price	Sale Price
Box of beads	\$3.49	\$2.79
Fabric	\$1.99 per ft	\$1.19 per ft
Candles	\$0.79	\$0.45
Ball of string	\$2.59	\$1.89
Paint set	\$4.99	\$3.75
Posterboard	\$1.19	\$1.09

Geno needs to buy 2 boxes of beads, 1 ball of string, and 9 candles.

1. If Geno buys craft supplies from Art's Crafts during the sale, how much will he pay for all of the items? **\$11.52**

2. If the items are not on sale, how much will Geno spend? **\$16.68**

3. How much will Geno save if he buys the craft supplies when they are on sale? **\$5.16**

4. If Geno buys a paint set and 3 posterboards while they are on sale, how much would he save? **\$1.54**

5. The Craft Warehouse offers a two-for-one sale on Wednesdays. Their prices are the same as the regular prices at Art's Crafts. Geno needs to buy 12 candles and 1 paint set. Will he pay less if he buys the supplies on a Wednesday from the Craft Warehouse or if he buys them from Art's Crafts during the sale? Explain.

**Art's Crafts; The cost is \$0.58 less**  
**(\$9.73 - \$9.15 = \$0.58).**

6. Geno decides to buy 5 ft of fabric. If he goes shopping on a sale day, at which store will he pay less for the fabric?

**Art's Crafts; the cost is \$0.02 less**  
**(\$5.97 - \$5.95 = \$0.02).**

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# Multiplying Decimals

Use the same strategy to multiply a decimal by a whole number or to multiply a decimal by a decimal.

Multiply  $0.72 \times 23$ .

Ignore the decimal points. Multiply as you would with two whole numbers.

Count the number of decimal places in both factors. Use that number of decimal places to write the answer.

$$\begin{array}{r}
 0.72 \leftarrow \boxed{2 \text{ decimal places}} \\
 \times 23 \\
 \hline
 216 \\
 144 \\
 \hline
 1656 \\
 16.56
 \end{array}$$

Multiply  $0.45 \times 0.8$ .

Ignore the decimal points. Multiply as you would with two whole numbers.

Count the number of decimal places in both factors. Use that number of decimal places to write the answer.

$$\begin{array}{r}
 0.45 \leftarrow \boxed{2 + 1 = 3 \text{ decimal places}} \\
 \times 0.8 \\
 \hline
 360 \\
 0.360
 \end{array}$$

Place the decimal point in each product.

1.  $1.2 \times 3.6 = 432$

4.32

2.  $5.5 \times 3.77 = 20735$

20.735

3.  $4.4 \times 2.333 = 102652$

10.2652

Find the product.

4.  $7 \times 0.5$  3.5

5.  $12 \times 0.08$  0.96

6.  $24 \times 0.17$  4.08

7.  $0.4 \times 0.17$  0.068

8.  $1.9 \times 0.46$  0.874

9.  $3.42 \times 5.15$  17.613  
or 17.6130

10. **Writing to Explain** If you multiply two decimals less than 1, can you predict whether the product will be less than or greater than either of the factors? Explain.

**If two numbers less than 1 are multiplied, the product will be less than either factor.**

**You are taking a part of a part of one, so it will be less.**

11. **Number Sense** Two factors are multiplied and their product is 34.44. One factor is a whole number. How many decimal places are in the other factor?

**2; The product has the total number of decimal places of the factors.  $0 + 2 = 2$**

Name \_\_\_\_\_

# Multiplying Decimals

Place the decimal point in each product.

1.  $3 \times 6.892 = 20676$     20.676    2.  $0.3 \times 4.57 = 1371$     1.371

Find each product.

3.  $14.3 \times 2.1 \times 8.9 =$     267.267    4.  $0.45 \times 0.01 =$     0.0045

5.  $67.1 \times 0.3 \times 0.4 =$     8.052    6.  $582.1 \times 4.2 =$     2,444.82

7. **Reasoning** Show how to find the product of  $16.2 \times 4$  using addition.

$16.2 + 16.2 + 16.2 + 16.2 = 64.8$

8. Which activity is 6 times as fast as the fastest rowing speed?

Luge

9. The fastest speed a table tennis ball has been hit is 21.12 times as fast as the speed for the fastest swimmer. What is the speed for the table tennis ball?

105.6 mph

10. How fast would 1.5 times the fastest rowing speed be?

21.345 mph

11. Which is the product of  $110.1 \times 2.5$ ?

A 770.7

**B** 275.25

C 77.07

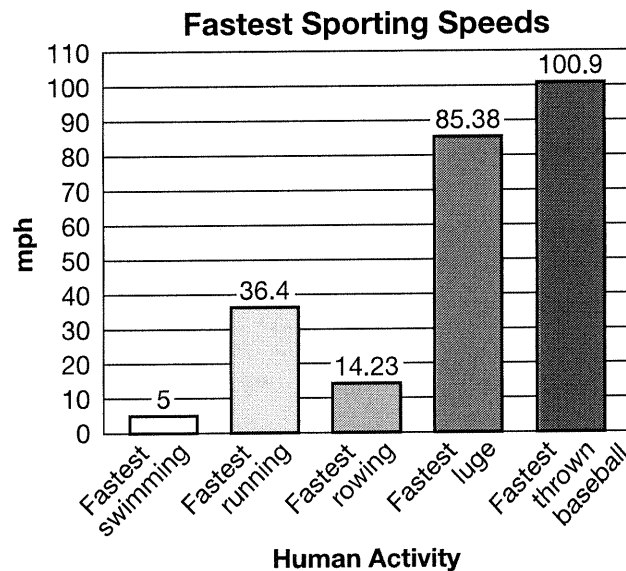
D 27.525

12. **Writing to Explain** Explain why multiplying  $37.4 \times 0.01$  gives a product that is less than 37.4.

Sample answer: Multiplying 37.4 by a number that is

less than 1, such as 0.01, would equal a number that is

less than 37.4.

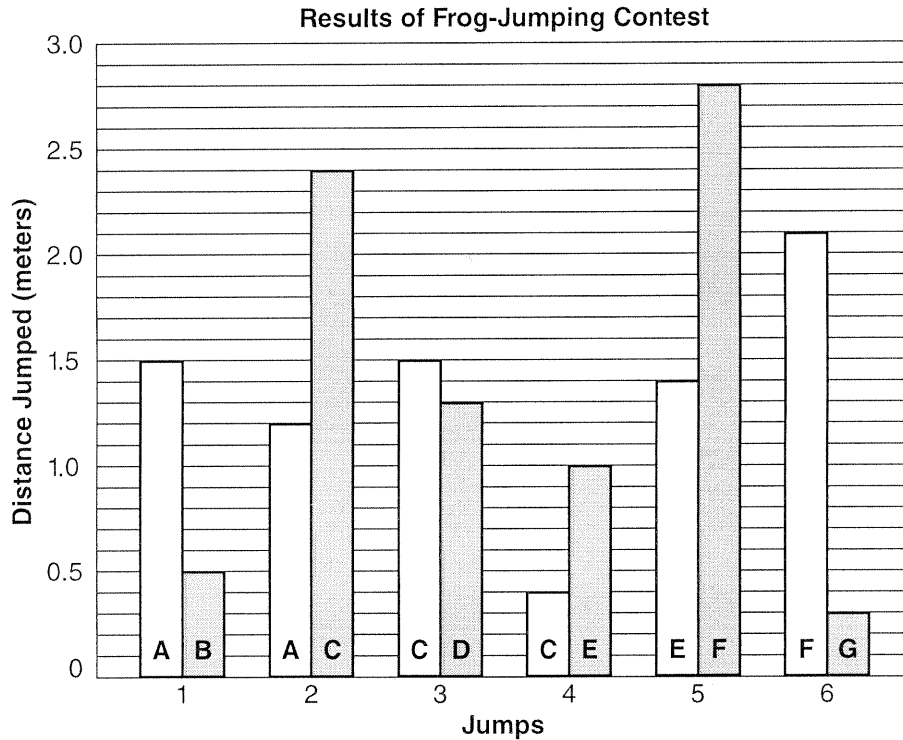


Name \_\_\_\_\_

# Frog Jumpers

Midvale Middle School held its annual carnival. The frog-jumping contest is a popular attraction at the carnival. The graph below shows how far the frogs jumped.

## Number Sense



Write a multiplication sentence for each jump that shows how much farther one frog jumped than the other.

1. Frog A and Frog B

$$\underline{0.5} \times \underline{3} = \underline{1.5}$$

2. Frog A and Frog C

$$\underline{1.2} \times \underline{2} = \underline{2.4}$$

3. Frog C and Frog E

$$\underline{0.4} \times \underline{2.5} = \underline{1.0}$$

4. Frog E and Frog F

$$\underline{1.4} \times \underline{2} = \underline{2.8}$$

5. Frog F and Frog G

$$\underline{0.3} \times \underline{7} = \underline{2.1}$$

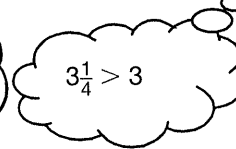
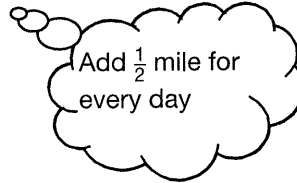
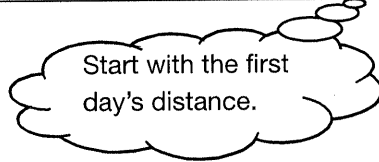
Name \_\_\_\_\_

## Problem Solving: Make a Table and Look for a Pattern

Mario plans to walk  $\frac{3}{4}$  mile today. Tomorrow he will walk  $\frac{1}{2}$  mile more, then  $\frac{1}{2}$  mile more every day after that. How long will it take before Mario walks 3 miles in one day?

Make a table showing each day and the distance he walks every day.

Day	1	2	3	4	5	6
Distance (mi)	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$	$3\frac{1}{4}$



Mario will walk at least 3 miles on Day 6.

Make tables to solve. Write each answer in a complete sentence.

1. The phone company charges 10¢ to connect a call for one minute and 8¢ per minute after that. How long could you talk on the phone for \$1?  
**With this phone company, you could talk for 12 minutes for \$1.**

2. A plumber charges \$30 for a house call and \$20 per  $\frac{1}{2}$  hour of work. How much will the plumber charge for  $4\frac{1}{2}$  hours of work at Mrs. DiMarco's house?

**The plumber would charge \$210.**

3. **Geometry** The angles of a triangle have a sum of  $180^\circ$ . The angles of a rectangle have a sum of  $360^\circ$ . The angles of a pentagon have a sum of  $540^\circ$ . Continue this pattern to find the sum of the angles of an octagon.

**The sum of the angles of an octagon is  $1080^\circ$ .**

4. **Writing to Explain** Write a problem based on the information in the table. Extend the table if necessary.

Day	1	2	3	4	5
Pages Read	23	58	93	128	□

**Sample answer: Amy read 23 pages on Day 1 and 35 pages each of the following days. How many pages did she read on Day 5?**



Name \_\_\_\_\_

Practice

**4-6**

## Problem Solving: Make a Table and Look for a Pattern

Make tables to help solve. Write each answer in a complete sentence.

1. A train has 3 engines, 52 boxcars, and 1 caboose. At every stop, it picks up 8 more boxcars. How many total cars (engines, cars, and cabooses) will the train have after 5 stops?

**The train will have a total of 96 cars after the fifth stop.**

2. Eileen likes to keep scrapbooks. She already has 4 scrapbooks filled with 40 pages each. If she fills 5 pages every month, how many months will it take her to fill up 2 more 40-page scrapbooks?

**It will take 16 months for Eileen to fill two more scrapbooks.**

3. Phil's Garage charges \$50 for towing and \$40 per hour to fix a car. Cliff's Cars charges \$60 for towing and \$38 per hour to fix a car. After how many hours of working on a car will the cost of towing and fixing a car be the same at the two repair shops?

**The charges will be the same after 5 hours of working on a car.**

4. Dominic got a new video game. The first time he played the game he scored 80 points. After that, each time he played he increased his score by 60 points. How many times will he have to play before he scores 500 points?

**He will score 500 points the 8th time he plays the game.**

5. A scientist is studying certain germs. She places 3 germs in a special solution that will help the germs grow. The number of germs doubles every hour. How many germs will there be after 8 hours?

A 24

B 384

**C 768**

D 786

6. **Writing to Explain** Ed saved \$50 one week. For the next 6 weeks, he saved \$25 more than he saved the week before. How much did he save in all? One student solved this problem using the expression  $\$50 + 6(\$25) = \$200$ . What error was made? What is the correct answer?

**The student did not take into account that the amount Ed saved increased every week. The correct answer is that Ed saved a total of \$875.**

Name \_\_\_\_\_

Enrichment

**4-6**

## Decimal Patterns

### Mental Math

1. Jennifer sets her binoculars to enlarge objects 10 times their actual size. If the length of an ant is 0.52 inches, what is its length as seen through her binoculars?

**5.2 inches**

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2. A store has a contest to guess the weight of 1,000 black jellybeans on display in its window. If each of the jellybeans weighs 0.072 ounces, what is the total weight of all the jellybeans?

**72 ounces**

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3. Jason saved \$0.02 each day for 10,000 days. How much did he save in all?

**\$200**

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4. Jefferson uses a microscope to observe a specimen in biology class. If his microscope enlarges objects 100 times their actual size and the specimen measures 0.009 inches, what is the size seen in the microscope?

**0.9 inches**

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5. Anya needs to buy 100 pounds of chocolate to make her holiday truffles. If chocolate sells for \$0.49 per pound, how much will Anya spend?

**\$49**

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6. Tim planted a tree that was 0.017 feet tall. After 10 years, the tree was 1,000 times as tall as when he planted it. What is the height of the tree after 10 years?

**17 feet**

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