



Checking Equations

You can check the answer to your equation to see if it is correct. Replace n with your answer. Do the math to see if the equation balances. Here's how:

Solve the equation

$$n - 14 = 2$$

$$\begin{array}{r} +14 \qquad \qquad +14 \\ \hline \end{array}$$

$n = 16$

Check the equation

$$n - 14 = 2 \quad \leftarrow \text{Copy the equation.}$$

$$16 - 14 = 2 \quad \leftarrow \text{Replace } n \text{ with your answer, 16.}$$

Do the math.

$$2 = 2 \quad \leftarrow \text{Does 2 balance 2?}$$

Yes, our equation is solved correctly.

Here is another example.

Solve the equation

$$n + 3 = 27$$

$$\begin{array}{r} -3 \qquad \qquad -3 \\ \hline \end{array}$$

$n = 24$

Check the equation

$$n + 3 = 27 \quad \leftarrow \text{Copy the equation.}$$

$$24 + 3 = 27 \quad \leftarrow \text{Replace } n \text{ with your answer, 24.}$$

Do the math.

$$27 = 27 \quad \leftarrow \text{Does 27 balance 27?}$$

Yes, our equation is solved correctly.

If the numbers on both sides of the = sign are not equal, go back and find your mistake. The numbers *must* balance or your answer is not correct.

Solve and check these equations. The first one is done for you.

- | | | | |
|---|--|----------------------------------|---|
| <p>1. a. $n + 7 = 15$</p> $\begin{array}{r} -7 \quad -7 \\ \hline n = 8 \end{array}$ | <p>b. $n + 7 = 15$</p> $8 + 7 = 15$ $15 = 15$ | <p>c. $n - 8 = 3$</p> | <p>d. <input checked="" type="checkbox"/></p> |
|---|--|----------------------------------|---|

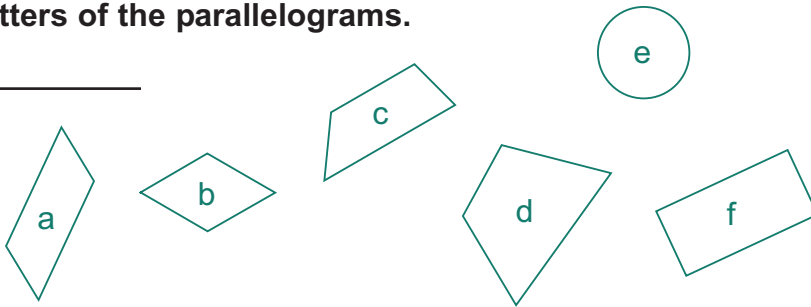
- | | | | |
|-------------------------------------|---|----------------------------------|---|
| <p>2. a. $n - 2 = 9$</p> | <p>b. <input checked="" type="checkbox"/></p> | <p>c. $n + 7 = 9$</p> | <p>d. <input checked="" type="checkbox"/></p> |
|-------------------------------------|---|----------------------------------|---|



We Remember

List the letters of the parallelograms.

3. _____



Put a check mark (✓) in the blank after each number that is divisible . . .

4. by 6. a. 96 _____ b. 68 _____ c. 142 _____ d. 210 _____ e. 84 _____

5. by 5. a. 90 _____ b. 80 _____ c. 70 _____ d. 56 _____ e. 15 _____

Write the digits that hold each place.

83,125,007,456,014

6. a. trillions _____ b. billions _____ c. millions _____

7. a. thousands _____ b. ten thousands _____ c. tens _____

8. a. hundred thousands _____ b. hundred millions _____ c. ten millions _____

Write the decimal.

9. Three hundred twelve thousandths _____

Round to the nearest . . .

10. hundred. a. 789 _____ b. 25,328 _____

11. thousand. a. 36,067 _____ b. 49,881 _____

12. ten thousand. a. 17,070 _____ b. 758,230 _____

13. hundred thousand. a. 965,178 _____ b. 6,324,987 _____

Combine integers.

14. a. $9 + 5 =$ _____ b. $-6 + 7 =$ _____ c. $-3 + (-6) =$ _____ d. $-9 + 9 =$ _____

Lesson 3

— $\frac{+}{-} \times$ Skill Builders —

15. a. $40 \overline{)2,840}$

b. $32 \overline{)8.64}$

c. $52 \overline{)41,808}$

Complete the sentences.


16. In 632.002, _____ is in the thousandths place.

17. In 26.501, _____ is in the tenths place.

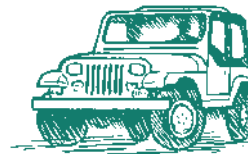
Copy and solve. Write the answer in simplest form on the blank.


18. $4.003 + 18.1 + 0.397 =$ _____

The Indian currency (money) is called the rupee. In 2003, one Canadian dollar was worth 31.5 rupees.

 19. Pastor Pradeep rides 63 kilometers by bicycle to a small church in Teelapara to preach. If it takes him 7 hours to ride there, how far does he ride in 1 hour?

Answer: _____

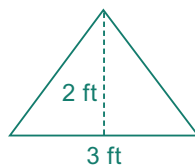


 20. Jordan's dad can get to Teelapara by Jeep in only 2 hours. How much longer does it take Pastor Pradeep to make a round trip to Teelapara than it takes Jordan's dad? (A round trip means there and back again.)

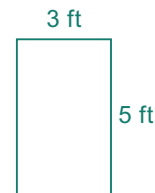
Answer: _____

Write the formulas and find the answers.

21. a. area of triangle



b. area of rectangle



Follow the directions.

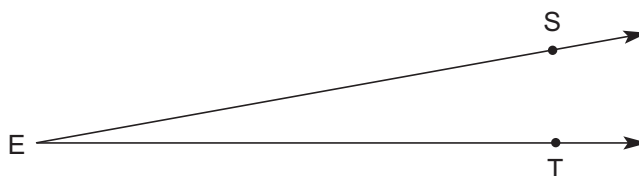
22. Measure $\angle SET$. _____

23. $\angle SET$ is an **acute**, **obtuse** angle.

24. Draw an angle that is congruent to $\angle SET$.

25. Name it $\angle DOG$.

26. Name the vertex in $\angle SET$. _____



Solve and check these equations.

27. a. $n + 6 = 13$

b.

c. $n + 11 = 20$

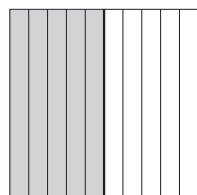
d.



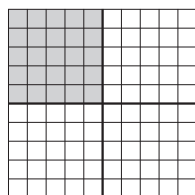
Decimals for Common Fractions

$$\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$$

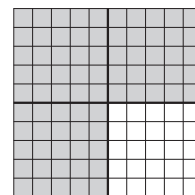
It is useful to know the equivalent decimal fractions for these common fractions.



$$\frac{1}{2} = \frac{5}{10} = 0.5$$



$$\frac{1}{4} = \frac{25}{100} = 0.25$$



$$\frac{3}{4} = \frac{75}{100} = 0.75$$

Lesson 4

We can use these same decimal values to change the fraction parts of the mixed numbers shown below.

$$3\frac{1}{2} = 3.5$$

$$6\frac{1}{4} = 6.25$$

$$9\frac{3}{4} = 9.75$$

Rewrite each fraction or mixed number as a decimal.

1. a. $\frac{1}{2} = \underline{\hspace{2cm}}$

b. $8\frac{3}{4} = \underline{\hspace{2cm}}$

c. $\frac{1}{4} = \underline{\hspace{2cm}}$

d. $\frac{3}{4} = \underline{\hspace{2cm}}$

Rewrite each decimal as a common fraction or mixed number.

2. a. $0.25 = \underline{\hspace{2cm}}$

b. $2.25 = \underline{\hspace{2cm}}$

c. $0.5 = \underline{\hspace{2cm}}$

d. $0.75 = \underline{\hspace{2cm}}$

Using Digit Sums to Check Division

Note to teacher: This lesson on checking with digit sums will be reviewed through Math 506 but will not be tested. When students are asked to check their division after Math 506, they may use the method of their choice.

Division can be checked using digit sums. Instead of multiplying and adding the larger numbers of the division problem, you can multiply and add the smaller digit sums.

$$\begin{array}{r}
 \text{divisor } \textcircled{2} \times \text{quotient } \textcircled{8} + \textcircled{6} \text{ remainder } \textcircled{4} \\
 38 \overline{)24,610} \text{ R}24 \\
 \underline{228} \\
 181 \\
 \underline{152} \\
 290 \\
 \underline{266} \\
 24
 \end{array}$$

- Find the digit sums of the divisor ($38: 3 + 8 = 11; 1 + 1 = \textcircled{2}$), the quotient ($647: 6 + 4 + 7 = 17; 1 + 7 = \textcircled{8}$), and the remainder ($24: 2 + 4 = \textcircled{6}$).
- Multiply** the digit sums of the divisor and quotient, **and add** the digit sum of the remainder. Then find the digit sum of that answer. ($2 \times 8 + 6 = 22; 2 + 2 = \textcircled{4}$)
- Find the digit sum of the dividend ($24,610: 2 + 4 + 6 + 1 + 0 = 13; 1 + 3 = \textcircled{4}$)
- Compare the results from Steps 2 and 3 ($4 = 4$). If they are the same, your answer should be right. If they are different, either your answer is wrong, or you made a mistake in your checking.

Check using digit sums. One answer is wrong. Correct it in the space at the right.

3. a.
$$\begin{array}{r} \bigcirc \times \bigcirc + \bigcirc \\ 46 \overline{)35,402} \quad \square \\ \underline{322} \\ 320 \\ \underline{276} \\ 442 \\ \underline{414} \\ 28 \end{array}$$

b.
$$\begin{array}{r} \bigcirc \times \bigcirc + \bigcirc \\ 35 \overline{)28,340} \quad \square \\ \underline{280} \\ 340 \\ \underline{325} \\ 15 \end{array}$$

c.
$$\begin{array}{r} \bigcirc \times \bigcirc + \bigcirc \\ \square \overline{) \square, \square \square \square} \quad \square \\ \square \square \square \\ \square \square \square \\ \square \square \square \\ \square \square \square \\ \square \square \square \\ \square \square \square \end{array}$$

Note: For Lesson 5, *Fascinating Discoveries*, you will need an empty 2-liter (or half-gallon) milk or juice carton and a sensitive scale or balance that weighs grams and kilograms.



We Remember

Solve and check these equations.

4. a. $n - 30 = 40$ b. c. $n - 11 = 22$ d.

Put a check mark (✓) in the blank after each number that is divisible . . .

5. by 6. a. 84 _____ b. 98 _____ c. 85 _____ d. 90 _____ e. 78 _____

Change to improper fractions.

6. a. $4\frac{7}{10} = \underline{\hspace{2cm}}$ b. $15 = \underline{\hspace{2cm}}$ c. $2\frac{7}{16} = \underline{\hspace{2cm}}$ d. $18 = \underline{\hspace{2cm}}$

Underline the statements that are true about parallelograms.

- 7. They are quadrilaterals.
- 8. Their opposite sides are parallel.
- 9. They can be squares.
- 10. They always have four equal-length sides.
- 11. They are round.



Lesson 4

+ **-** **x** *Skill Builders*

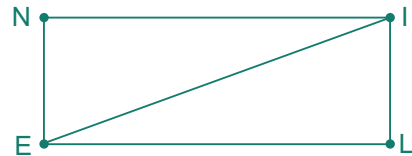
12. a. $72 \overline{)4,969}$ b. $48 \overline{)10,320}$ c. $\begin{array}{r} 45.6 \\ \times 987 \\ \hline \end{array}$

13. a. $\begin{array}{r} \$3 \\ - 1.45 \\ \hline \end{array}$ b. $\begin{array}{r} 3\frac{1}{9} \\ - 1\frac{2}{3} \\ \hline \end{array}$ c. $\begin{array}{r} 0.13 \\ \times 0.3 \\ \hline \end{array}$ d. $\begin{array}{r} 6.1 \\ 0.34 \\ + 16.013 \\ \hline \end{array}$

14. a. $\frac{3}{12} \times \frac{4}{12} = \underline{\hspace{2cm}}$ b. $\frac{6}{7} \times \frac{2}{3} = \underline{\hspace{2cm}}$ c. $\frac{2}{3} \times \frac{4}{5} = \underline{\hspace{2cm}}$ d. $\frac{3}{4} \times \frac{3}{5} = \underline{\hspace{2cm}}$

Write *horizontal* or *vertical* to complete the sentences.

15. \overline{NI} is _____.
16. \overline{NE} is _____.
17. \overline{EL} is _____.



18. Mr. Reston’s Jeep travels about 12 km for each liter of gasoline he uses. How far can he travel if his 40-L gas tank is full?

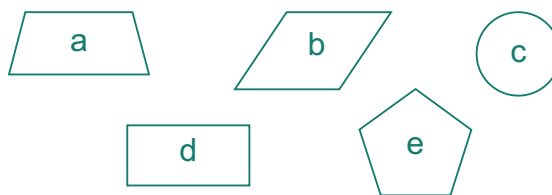
Answer: _____

☆ **19.** Mr. Reston has already used 8 L of gasoline, so his tank is no longer full. How much farther can he travel on the remaining gasoline?

Answer: _____

Answer the question.

20. Which figures are quadrilaterals? _____



Write = or ≠ to tell whether the equations balance.

21. a. $60 - 4$ 11×6
 _____ _____

b. $40 + 8$ 12×4
 _____ _____

c. $72 \div 6 \times 4$ 6×8
 _____ _____

Circle the sensible amount.

22. Jam for a piece of toast 3 tsp 3 c

23. Motor oil for a car 4 mL 4 L

Write the ratio in three different ways.

Two cups of juice cost 5 rupees.

24. What is the ratio of cups to rupees?

In 2003 India's population was 1,050,000,000. The only country with more people at that time was China with 1,282,000,000.

Expand the number by multiplying each digit by its place value.

25. $7,284,359 =$ _____

Write a decimal and a common fraction for each picture.



26. a. _____

b. _____

c. _____

Divide and check, using digit sums.

27. a. $5 \overline{)672}$

b. $70 \overline{)1,050}$

c. $38 \overline{)543}$