



MATH SUMMER PACKET
TURN OF RIVER MIDDLE SCHOOL



WELCOME TO 8TH GRADE!

Dear Incoming Eighth Grader,

Welcome to Eighth Grade! We have created this packet of worksheets to help you exercise your math muscles over the summer months. Your Math teacher will collect and review this packet the first week of school. The packet will be used as a project grade and your first quiz will follow the review of this packet.

All students are expected to complete this packet.

This packet contains material that you have learned in the prior years of your education. You will need these skills to be successful in the upcoming school year.



Find the missing value in each of the problems.

- 1) $? + 408 = 815$
- 2) $546 + ? = 719$
- 3) $996 = 995 + ?$
- 4) $870 = ? + 120$
- 5) $? = 402 + 451$
- 6) $965 - 83 = ?$
- 7) $460 - ? = 221$
- 8) $? - 369 = 286$
- 9) $? = 1000 - 455$
- 10) $805 = 979 - ?$
- 11) $969 = ? - 17$
- 12) $783 + 65 = ?$
- 13) $? + 72 = 659$
- 14) $64 + ? = 717$
- 15) $997 = 991 + ?$
- 16) $996 = ? + 6$
- 17) $? = 277 + 22$
- 18) $924 - 516 = ?$
- 19) $227 - ? = 38$
- 20) $? - 28 = 659$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____



Find the missing value in each of the problems.

Answers

848	174	239	189	853
408	407	6	299	750
545	587	990	687	173
653	1	986	882	655

1) $? + 408 = 815$

2) $546 + ? = 719$

3) $996 = 995 + ?$

4) $870 = ? + 120$

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1. _____
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13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____



Find the missing value in each of the problems.

Answers

1) $? \times 5 = 50$

1. _____

2) $2 \times ? = 2$

2. _____

3) $45 = 5 \times ?$

3. _____

4) $40 = ? \times 5$

4. _____

5) $? = 8 \times 6$

5. _____

6) $8 \div 1 = ?$

6. _____

7) $90 \div ? = 10$

7. _____

8) $? \div 5 = 1$

8. _____

9) $? = 20 \div 5$

9. _____

10) $2 = 14 \div ?$

10. _____

11) $2 = ? \div 2$

11. _____

12) $8 \times 6 = ?$

12. _____

13) $? \times 2 = 4$

13. _____

14) $9 \times ? = 27$

14. _____

15) $14 = 2 \times ?$

15. _____

16) $10 = ? \times 1$

16. _____

17) $? = 8 \times 8$

17. _____

18) $4 \div 4 = ?$

18. _____

19) $70 \div ? = 10$

19. _____

20) $? \div 1 = 8$

20. _____



Find the missing value in each of the problems.

Answers

1	3	48	7	2
4	7	64	9	8
10	48	10	1	8
8	7	5	9	4

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

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11) $2 = ? \div 2$

12) $8 \times 6 = ?$

13) $? \times 2 = 4$

14) $9 \times ? = 27$

15) $14 = 2 \times ?$

16) $10 = ? \times 1$

17) $? = 8 \times 8$

18) $4 \div 4 = ?$

19) $70 \div ? = 10$

20) $? \div 1 = 8$

Using the Distributive Property

Simplify each expression.

1) $-6(a + 8)$

2) $4(1 + 9x)$

3) $6(-5n + 7)$

4) $(9m + 10) \cdot 2$

5) $(-4 - 3n) \cdot -8$

6) $8(-b - 4)$

7) $(1 - 7n) \cdot 5$

8) $-6(x + 4)$

9) $5(3m - 6)$

10) $(-6p + 7) \cdot -4$

11) $5(b - 1)$

12) $(x + 9) \cdot 5$

13) $-4(-8x - 8)$

14) $-6(7 + x)$

15) $-3(x - 5)$

16) $-5(10x + 1)$

17) $(1 + 2v) \cdot 5$

18) $-8(1 - 5x)$

19) $-7(5k - 4)$

20) $-5(7a - 6)$

21) $5(n + 6)$

22) $4(3r - 8)$

23) $3(5 + 5x)$

24) $(1 + 9x) \cdot -10$

Combining Like Terms

Simplify each expression.

1) $-6k + 7k$

2) $12r - 8 - 12$

3) $n - 10 + 9n - 3$

4) $-4x - 10x$

5) $-r - 10r$

6) $-2x + 11 + 6x$

7) $11r - 12r$

8) $-v + 12v$

9) $-8x - 11x$

10) $4p + 2p$

11) $5n + 11n$

12) $n + 4 - 9 - 5n$

13) $12r + 5 + 3r - 5$

14) $-5 + 9n + 6$

15) $n - 4 - 9$

16) $4n - n$

17) $-3x - 9 + 15x$

18) $-9k + 8k$

19) $-16n - 14n$

20) $15n - 19n$

21) $-4 + 7(1 - 3m)$

22) $-5n + 3(6 + 7n)$

23) $-2n - (9 - 10n)$

24) $10 - 5(9n - 9)$

25) $9a + 10(6a - 1)$

26) $-9(6m - 3) + 6(1 + 4m)$

27) $-10(1 - 9x) + 6(x - 10)$

28) $5(-2n + 4) + 2(n + 3)$

29) $-3(10b + 10) + 5(b + 2)$

30) $-7(n + 3) - 8(1 + 8n)$



Solve each problem.

Answers

- 1) We paid \$40 for 8 hamburgers, which is a rate of \$ ___ per hamburger.
- 2) A pencil company used 60 grams of rubber to make 10 pencils, which is a rate of ___ grams per pencil.
- 3) An industrial machine is able to make 9 pens in 3 seconds. What is the rate made per second?
- 4) It took a pet store 10 weeks to sell 80 cats. What is the rate sold per week?
- 5) For every 4 miles Vanessa jogged, Cody jogged 3 miles. If Vanessa jogged 1 miles, how far would Cody have jogged?
- 6) A tailor used 2 meters of string to make 10 Halloween masks. He used ___ of a meter for each mask.
- 7) A machine worked for 5 hours and used 4 kilowatts of electricity. The machine used ___ of a kilowatt each hour it worked.
- 8) A candy company used 8 gallons of syrup to make 4 batches of candy. What is the rate of syrup per batch?
- 9) Oliver earned \$12 for mowing 3 lawns. What is the rate earned per lawn mowed?
- 10) A baker used 4 cups of flour to make 5 batches of brownies. He used ___ of a cup of flour to make 1 batch of brownies.
- 11) A computer programmer worked for 10 hours and earned \$70, which is a rate of \$ ___ per hour.
- 12) A scientist used 2 gallons of liquid for every 3 hours he works. He uses ___ of a gallon each hour he works.
- 13) A fair owner made 18 dollars when a group of 3 people entered, which is a rate of ___ dollar per person.
- 14) Luke spent 8 days collecting cans and he managed to collect 6 pounds. He collected ___ of a pound each day.
- 15) A jogger travelled 50 kilometers in 5 days. What is the rate he travelled per day?

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



Evaluate each expression.

1) $40 \div 1 + 3 - (3 \times 7) + 7 - 5$

2) $1 - 5 + 1 \times (4 \times 4 - 31) \times 8$

3) $(4 + 9 + 16 \div 4) - 8 - 3 \times 5$

4) $(15 \div 5 + 6 + 9) \times 4 \times 2 + 7$

5) $5 - (49 \div 1 - 5) \times 2 + 9 - 3$

6) $(2 + 76 \div 1 + 9) + 4 - 3 \times 9$

7) $5 \times 5 - 7 + 82 \div (2 \times 1) + 5$

8) $7 \times 7 + 1 + 16 \div 8 - (6 - 7)$

9) $4 - 9 + (7 \times 11) \times 5 + 7 + 8$

10) $(5 - 6 \times 9 + 6) \times 9 + 3 - 85$

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____



Evaluate each expression.

24

-6

64

-77

-124

151

64

53

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

1) $40 \div 1 + 3 - (3 \times 7) + 7 - 5$

2) $1 - 5 + 1 \times (4 \times 4 - 31) \times 8$

3) $(4 + 9 + 16 \div 4) - 8 - 3 \times 5$

4) $(15 \div 5 + 6 + 9) \times 4 \times 2 + 7$

5) $5 - (49 \div 1 - 5) \times 2 + 9 - 3$

6) $(2 + 76 \div 1 + 9) + 4 - 3 \times 9$

7) $5 \times 5 - 7 + 82 \div (2 \times 1) + 5$

8) $7 \times 7 + 1 + 16 \div 8 - (6 - 7)$



Determine which letter best represents the sum.

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

2) $\frac{3}{6} + \frac{3}{6}$

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

4) $\frac{4}{8} + \frac{5}{8}$

5) $\frac{1}{8} + \frac{4}{8}$

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

7) $\frac{3}{5} + \frac{1}{5}$

8) $\frac{2}{10} + \frac{2}{10}$

9) $\frac{4}{6} + \frac{3}{6}$

10) $\frac{2}{3} + \frac{2}{3}$

11) $\frac{5}{12} + \frac{4}{12}$

12) $\frac{2}{3} + \frac{1}{3}$

13) $\frac{4}{5} + \frac{2}{5}$

14) $\frac{2}{6} + \frac{2}{6}$

15) $\frac{1}{10} + \frac{8}{10}$

Answers

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

A.	B.	C.
D.	E.	F.
G.	H.	I.
J.	K.	L.
M.	N.	O.



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

1) $\frac{2}{5} - \frac{1}{3} =$

2) $\frac{4}{5} - \frac{1}{2} =$

3) $\frac{10}{12} - \frac{2}{3} =$

4) $\frac{1}{2} - \frac{1}{5} =$

5) $\frac{8}{10} - \frac{2}{4} =$

6) $\frac{4}{6} - \frac{1}{12} =$

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

8) $\frac{10}{12} + \frac{1}{2} =$

9) $\frac{4}{5} + \frac{5}{12} =$

10) $\frac{5}{6} + \frac{6}{12} =$

11) $\frac{1}{3} + \frac{2}{6} =$

12) $\frac{7}{8} + \frac{8}{10} =$

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____



Solve each problem.

Answers

1) $\frac{1}{2} \times \frac{1}{2} =$

2) $\frac{1}{4} \times \frac{3}{5} =$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

3) $\frac{1}{2} \times \frac{4}{5} =$

4) $\frac{2}{3} \times \frac{1}{2} =$

5) $\frac{2}{5} \times \frac{1}{3} =$

6) $\frac{1}{2} \times \frac{4}{5} =$

7) $\frac{2}{3} \times \frac{1}{2} =$

8) $\frac{1}{2} \times \frac{1}{5} =$

9) $\frac{3}{5} \times \frac{3}{4} =$

10) $\frac{1}{3} \times \frac{2}{4} =$

11) $\frac{1}{2} \times \frac{1}{5} =$

12) $\frac{2}{4} \times \frac{1}{4} =$



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

1) $3\frac{1}{4} \div 3 =$

2) $4\frac{4}{5} \div 5\frac{1}{3} =$

3) $4\frac{1}{2} \div \frac{7}{3} =$

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

5) $1 \div 4\frac{1}{2} =$

6) $1 \div \frac{14}{4} =$

7) $\frac{2}{6} \div \frac{1}{5} =$

8) $\frac{1}{2} \div 5 =$

9) $\frac{2}{3} \div 2\frac{2}{6} =$

10) $\frac{3}{6} \div \frac{5}{2} =$

11) $\frac{7}{2} \div \frac{2}{6} =$

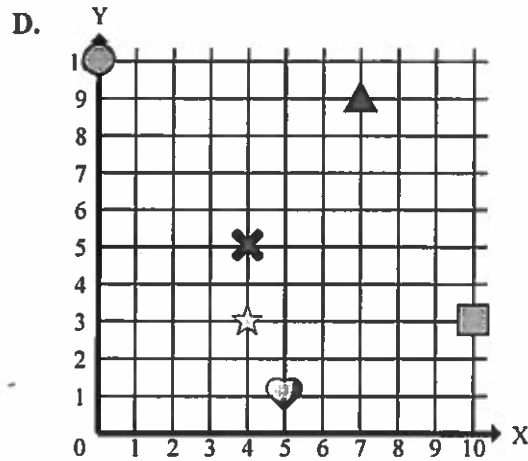
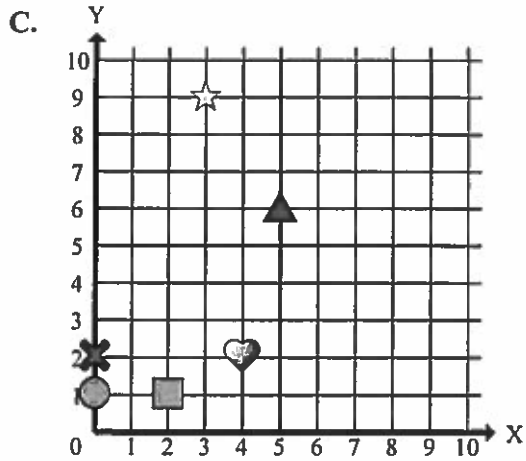
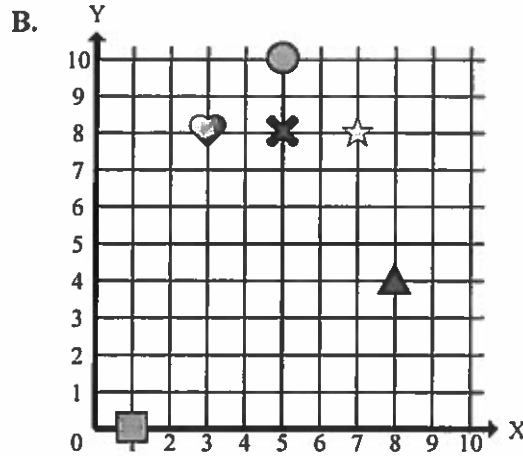
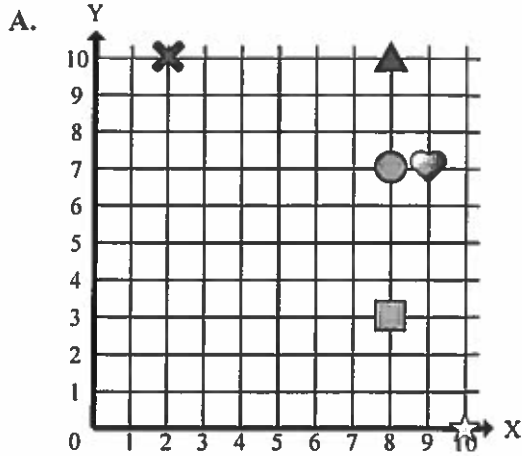
12) $\frac{13}{4} \div 5 =$

Answers

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



Determine which coordinate plane answers each question.



Answers

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

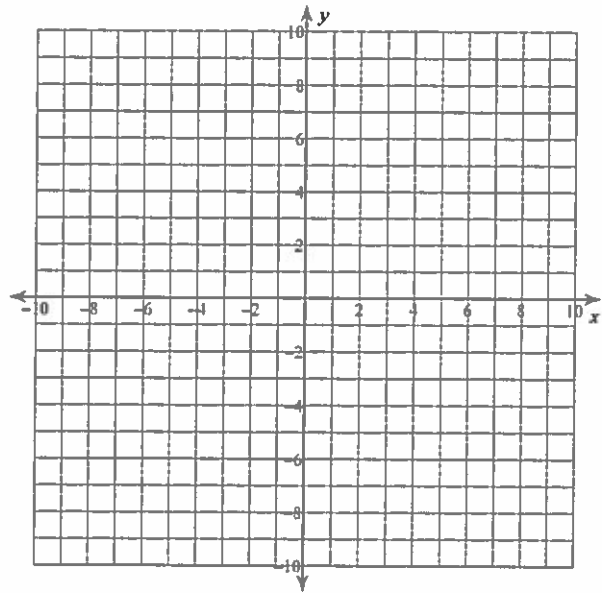
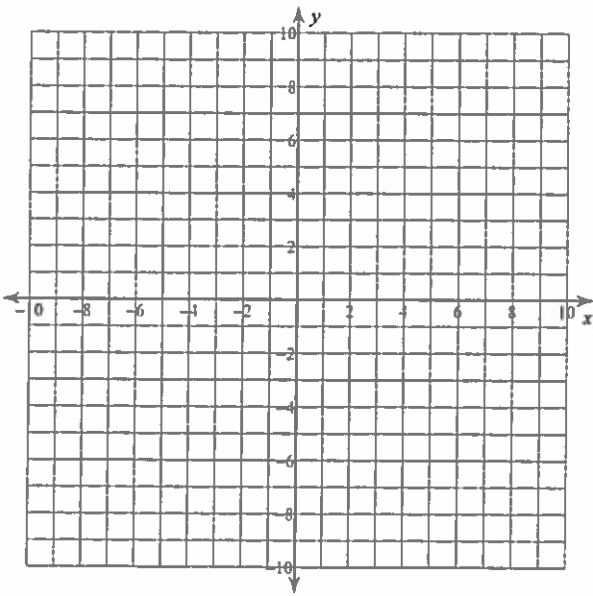
- 1) Which coordinate plane has a shape at (7 , 8)?
- 2) Which coordinate plane has a shape at (3 , 8)?
- 3) Which coordinate plane has a shape at (5 , 10)?
- 4) Which coordinate plane has a shape at (2 , 10)?
- 5) Which coordinate plane has a shape at (5 , 1)?
- 6) Which coordinate plane has a shape at (5 , 8)?
- 7) Which coordinate plane has a shape at (8 , 4)?
- 8) Which coordinate plane has a shape at (5 , 6)?
- 9) Which coordinate plane has a shape at (4 , 5)?
- 10) Which coordinate plane has a shape at (0 , 10)?
- 11) Which coordinate plane has a shape at (8 , 3)?
- 12) Which coordinate plane has a shape at (1 , 0)?
- 13) Which coordinate plane has a shape at (2 , 1)?
- 14) Which coordinate plane has a shape at (7 , 9)?
- 15) Which coordinate plane has a shape at (4 , 2)?

Points in the Coordinate Plane

Plot each point.

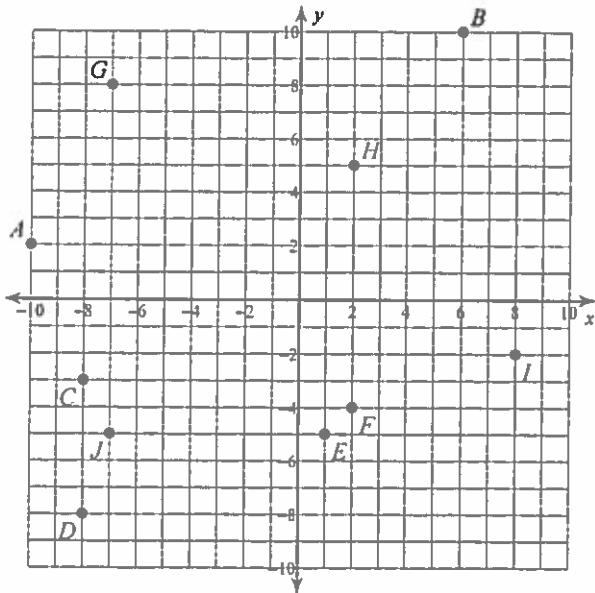
- 1) $J(5, 10)$ $I(1, 9)$ $H(6, -9)$
 $G(-6, 8)$ $F(9, 0)$ $E(-6, 0)$
 $D(-8, -4)$ $C(5, 0)$ $B(-1, -1)$
 $A(-8, -1)$

- 2) $A(7, 10)$ $B(0, 4)$ $C(-1, 10)$
 $D(-6, -6)$ $E(10, 0)$ $F(9, 7)$
 $G(-3, -4)$ $H(-4, -9)$ $I(4, 1)$
 $J(7, -9)$

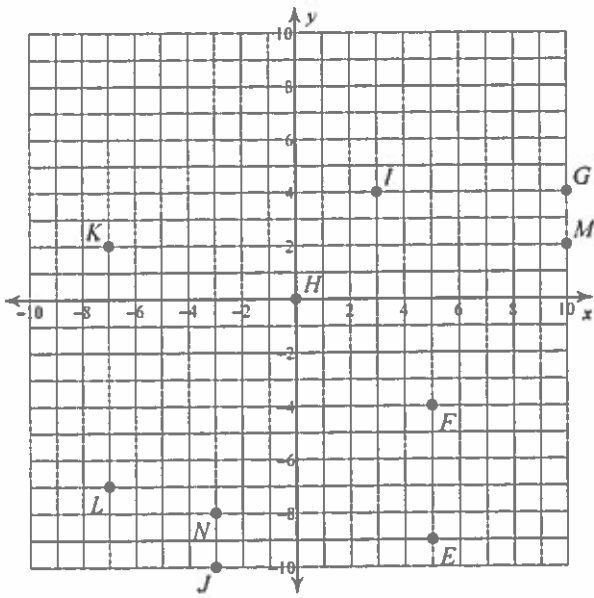


State the coordinates of each point.

3)



4)



State the quadrant or axis that each point lies in.

5) $L(-2, 1)$ $K(-3, -2)$ $J(3, 1)$

6) $T(-3, 5)$ $U(1, 0)$ $V(-5, 5)$

7) $S(5, -7)$ $T(7, 2)$ $U(-5, 4)$

8) $R(7, 0)$ $Q(8, -1)$ $P(3, 0)$

Critical thinking questions:

9) State the coordinates of the endpoints of a line segment that intersects the y -axis.

10) State the coordinates of the endpoints of a line segment that is not parallel to either axis, and does not intersect either axis.

One-Step Equation Word Problems

- 1) Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She has already put in 2 cups. How many more cups does she need to put in?
- 2) At a restaurant, Mike and his three friends decided to divide the bill evenly. If each person paid \$13 then what was the total bill?
- 3) How many packages of diapers can you buy with \$40 if one package costs \$8?
- 4) Last Friday Trevon had \$29. Over the weekend he received some money for cleaning the attic. He now has \$41. How much money did he receive?
- 5) Last week Julia ran 30 miles more than Pranav. Julia ran 47 miles. How many miles did Pranav run?
- 6) How many boxes of envelopes can you buy with \$12 if one box costs \$3?
- 7) Amanda and her best friend found some money buried in a field. They split the money evenly, each getting \$24.28. How much money did they find?
- 8) Jenny wants to buy an MP3 player that costs \$30.98. How much change does she receive if she gives the cashier \$40?

- 9) Last Friday Adam had \$22.33. Over the weekend he received some money for cleaning the attic. He now has \$32. How much money did he receive?
- 10) After paying \$5.12 for a salad, Norachai has \$27.10. How much money did he have before buying the salad?
- 11) A recipe for cookies calls for $3\frac{1}{4}$ cups of sugar. Amy has already put in $3\frac{1}{9}$ cups. How many more cups does she need to put in?
- 12) Your mother gave you \$13.32 with which to buy a present. This covered $\frac{3}{5}$ of the cost. How much did the present cost?
- 13) If the weight of a package is multiplied by $\frac{5}{7}$ the result is 40.5 pounds. Find the weight of the package.
- 14) A stray dog ate 12 of your muffins. That was $\frac{3}{10}$ of all of them! With how many did you start?

Two-Step Equation Word Problems

- 1) 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?
- 2) Aliyah had \$24 to spend on seven pencils. After buying them she had \$10. How much did each pencil cost?
- 3) The sum of three consecutive numbers is 72. What are the smallest of these numbers?
- 4) The sum of three consecutive even numbers is 48. What are the smallest of these numbers?
- 5) You bought a magazine for \$5 and four erasers. You spent a total of \$25. How much did each eraser cost?
- 6) Maria bought seven boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?
- 7) Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?
- 8) Imani spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for \$4. What is her weekly allowance if she ended with \$12?

- 9) Aliyah had some candy to give to her four children. She first took ten pieces for herself and then evenly divided the rest among her children. Each child received two pieces. With how many pieces did she start?
- 10) How old am I if 400 reduced by 2 times my age is 244?
- 11) Jill sold half of her comic books and then bought sixteen more. She now has 36. With how many did she begin?
- 12) For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?
- 13) On Tuesday Shanice bought five hats. On Wednesday half of all the hats that she had were destroyed. On Thursday there were only 17 left. How many did she have on Monday?
- 14) The Cooking Club made some pies to sell at a basketball game to raise money for the new math books. The cafeteria contributed four pies to the sale. Each pie was then cut into five pieces and sold. There were a total of 60 pieces to sell. How many pies did the club make?