Name

5-1A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective A

In 1–4, evaluate.

1. $222 + 888$ _____

2. $821{,}089 + 34{,}211$ _____

3. $37.4 + 10.2$ _____

4. $34 + 231$ _____

PROPERTIES Objective E

In 5 and 6, use the Commutative Property of Addition to rewrite the expression.

5. $913 + -648 =$ _____

6. $-b + d =$ _____

PROPERTIES Objective F

In 7–9, state whether the sentence given below is an example of the Commutative Property of Addition.

7. $z + x = (z + x)$ _____

8. $g + y = y + g$ _____

9. $a + a = 2a$ _____

USES Objective G

In 10–12 a situation is given. Write an equation or expression that represents the situation.

10. Lisa borrowed d dollars from a friend and then borrowed \$15 from the same friend the following week. She now owes her friend J dollars. _____

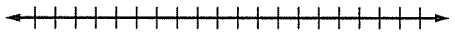
11. Nelly drove 21 miles to work. After work, she drove P miles back towards home and stops at a supermarket that she passes while driving. She is then M miles from home. _____

12. The stock market opened the day at a value of S. By the end of the day it had gained 45.6 points. _____

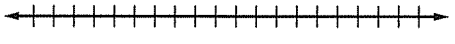
REPRESENTATIONS Objective M

In 13 and 14, draw a picture of the addition using arrows, and evaluate the expression.

13. $12 + 12$ _____



14. $0.67 + 4.35$ _____



Name

5-1B Lesson Master

SKILLS Objective A: Add and subtract positive and negative numbers.

In 1–8, evaluate.

1. $517 + 698$ _____
2. $849 + 259$ _____
3. $584{,}632 + 85{,}468$ _____
4. $632{,}584 + 86{,}458$ _____
5. $16.8 + 11.3$ _____
6. $17.02 + 9.1$ _____
7. $54 + 782$ _____
8. $918 + 83$ _____

PROPERTIES Objective E: Apply properties of addition and subtraction to simplify expressions.

In 9–12, use the Commutative Property of Addition to rewrite the expression.

9. $583 + 716 =$ _____
10. $-483 + 542 =$ _____
11. $c + -f =$ _____
12. $-g + k =$ _____

PROPERTIES Objective F: Recognize uses of the Commutative and Associative Properties of Addition and the Addition Property of Equality.

In 13–18, state whether the sentence given below is an example of the Commutative Property of Addition.

13. $r + s = s + r$ _____
14. $m + -n = -n + m$ _____
15. $b + b = 2b$ _____
16. $w + (x + y) = (x + y) + w$ _____
17. $q + p = (q + p)$ _____
18. $\frac{4}{5} + \frac{2}{3} = \frac{2}{5} + \frac{4}{3}$ _____

USES Objective G: Use the Putting-Together and Slide Models for Addition to describe situations leading to addition.

In 19–24, a situation is given. Write an equation or expression that represents the situation.

19. Jack saves m dollars and then saves \$25 more. He now has p dollars. _____

20. In playing a board game, Charles owes Kim A dollars. He gives her a \$500 bill and gets back C dollars in change. _____

21. Alicia and Alex take turns driving. Alicia drives x miles, then Alex drives y miles, and then Alicia drives z miles. Altogether they drive 268 miles. _____

22. Micah leaves his home one morning for vacation. He drives B miles and realizes he forgot his jacket at the restaurant where he ate lunch 20 miles before. He drives back to the restaurant and is now C miles from home. _____

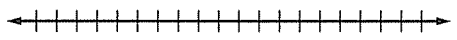
23. A stock opens the day at \$43.27 and goes up d dollars. _____

24. In a mountain town, 4,235 feet in elevation, a landscaper digs and is f feet below the ground's surface. _____

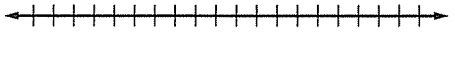
REPRESENTATIONS Objective M: Graph addition and subtraction of positive and negative numbers using arrows on a number line.

In 25–30, draw a picture of the addition using arrows, and evaluate the expression.

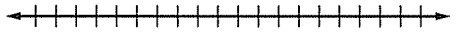
25. $100 + 100$ _____



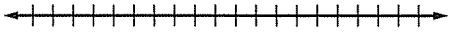
26. $51.9 + -17.4$ _____



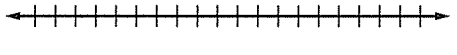
27. $23 + -41$ _____



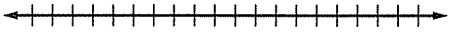
28. $-15 + 17$ _____



29. $23 + -8$ _____



30. $-15 + 4$ _____



Name

5-2A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective A

In 1 and 2, evaluate.

1. $5 + -\frac{3}{4}$ _____

2. $-47 + -953$ _____

SKILLS Objective B

In 3 and 4, evaluate.

3. $|-23| + |23| + -|23|$ _____

4. $|-15 + 13|$ _____

PROPERTIES Objective E

In 5 and 6, use the Associative Property of Addition to rewrite the expression.

5. $6 + (10 + 3) =$ _____

6. $m + (n + r) + s =$ _____

PROPERTIES Objective F

In 7 and 8, state whether the sentence given below is an example of the Associative Property of Addition.

7. $(g + y) = (y + g)$ _____

8. $(a + c) + (b + d) = a + (c + b) + d$ _____

REPRESENTATIONS Objective L

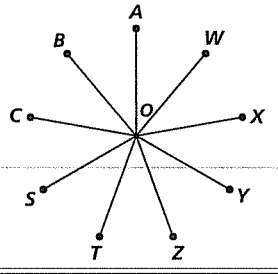
9. What is the result of a 180° turn followed by a −45° turn? _____

10. How far does the minute hand of a clock turn

    a. in an hour? _____

    b. in 20 minutes? _____

In 11 and 12, refer to the diagram at the right in which all small angles have the same measure. Find the magnitude of the turn around point *O*.



11. Clockwise from B to Y _____

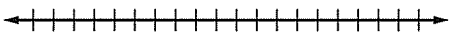
12. Counterclockwise from W to S _____

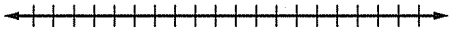
REPRESENTATIONS Objective M

In 13 and 14, draw a picture of the addition using arrows, and evaluate the expression.

13. $64 + 25$ _____

14. $-89 + 95$ _____





Name

5-2B Lesson Master

SKILLS Objective A: Add and subtract positive and negative numbers.

In 1–6, evaluate.

1. $\frac{-3}{5} + 7$ _____
2. $14 + \frac{-7}{8}$ _____
3. $-76 + 38$ _____
4. $51 + -19$ _____
5. $386 + 511$ _____
6. $-321 + -85$ _____

SKILLS Objective B: Calculate absolute value.

In 7–14, evaluate.

7. $|423.4|$ _____
8. $|-17.17|$ _____
9. $|r + s|$, when $r = 23$ and $s = 48$ _____
10. $|r + s|$, when $r = -23$ and $s = 48$ _____
11. $-|r + s|$, when $r = 23$ and $s = 48$ _____
12. $-|r + s|$, when $r = 23$ and $s = -48$ _____
13. $|15| + -|46| + 31$ _____
14. $|26| + |-50| - |-16| + -|-14|$ _____

PROPERTIES Objective E: Apply properties of addition and subtraction to simplify expressions.

In 15–20, use the Associative Property of Addition to rewrite the expression.

15. $(22 + 33) + 44$ _____
16. $17 + (-2 + 3)$ _____
17. $(5 + 3) + (1 + 9)$ _____
18. $10 + (12 + -4) + 15$ _____
19. $x + (y + -z)$ _____
20. $(-a + b) + (-c + d)$ _____

PROPERTIES Objective F: Recognize uses of the Commutative and Associative Properties of Addition and the Addition Property of Equality.

In 21–28, state whether the sentence given below is an example of the Associative Property of Addition.

21. $(8 + 3) + 7 = (3 + 8) + 7$ _____
22. $9 + (5 + 4) = (9 + 5) + 4$ _____
23. $(x + y) + -3 = x + (y + -3)$ _____
24. $8 + (7 + 5) + 6 = 8 + (5 + 7) + 6$ _____
25. $(r + s) + t = r + (s - t)$ _____
26. $(2 + 5) + (8 + 9) = 2 + (5 + 8) + 9$ _____
27. $(8 - 5) - 2 = 8 - (5 - 2)$ _____
28. $2 + (76 - 41) = (2 + 76) - 41$ _____

REPRESENTATIONS Objective L: Calculate magnitudes of turns given angle measures or revolutions.

29. What is the result of a 166° turn followed by a −46° turn? _____

30. What is the result of a 90° turn followed by two more 90° turns? _____

In 31–34, how far does the minute hand of a clock turn in the given time?

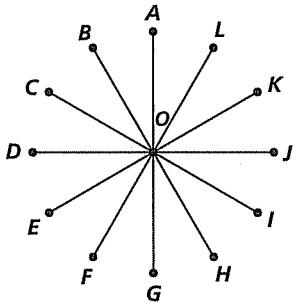
31. in 15 minutes? _____

32. in 5 minutes? _____

33. in 45 minutes? _____

34. in 1 minute? _____

In 35–38, refer to the diagram at the right in which all small angles have the same measure. Find the magnitude of the turn around point *O*.



35. Clockwise from A to G? _____

36. Clockwise from E to I? _____

37. Counterclockwise from A to G? _____

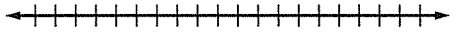
38. Counterclockwise from E to I? _____

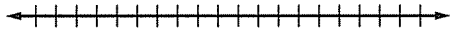
REPRESENTATIONS Objective M: Graph addition and subtraction of positive and negative numbers using arrows on a number line.

In 39–42, draw a picture of the addition using arrows, and evaluate the expression.

39. $-650 + -320$ _____

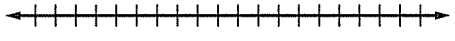
40. $-79 + 43$ _____

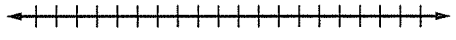




41. $68 + -15$ _____

42. $42 + 37$ _____





Name

5-3A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective A

In 1–6, evaluate.

1. $444 - 555$ _____
2. $-422{,}399 - 10{,}051$ _____
3. $43.21 - -5.89$ _____
4. $\frac{-9}{14} - \frac{-8}{21}$ _____
5. $p - -p$ _____
6. $-w - -w$ _____

PROPERTIES Objective E

In 7 and 8, use the Algebraic Definition of Subtraction to rewrite the expression.

7. $48.1 - 271 =$ _____
8. $-q - p =$ _____

In 9 and 10, state whether the sentence given below is an example of the Algebraic Definition of Subtraction.

9. $z + x = z - -x$ _____
10. $h - s = -h + s$ _____

USES Objective I

In 11–13, a situation is given. Write an equation or expression that represents the situation.

11. A snack bar sells a regular taco salad for \$4.89. The taco salad special, including a drink and dessert, costs P. How much more would someone pay for the special? _____

12. In late spring, the Caruthers' tree was 24 feet tall. Six months later, it was T feet tall. How much did it grow? _____

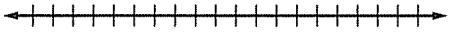
13. The stock market opened the day at a value of S. By the end of the day it had fallen 112.8 points. _____

REPRESENTATIONS Objective M

In 14 and 15, draw a picture of the subtraction using arrows, and evaluate the expression.

14. $-89 - 54$ _____

15. $14 - 81$ _____



Name

5-3B Lesson Master

SKILLS Objective A: Add and subtract positive and negative numbers.

In 1–12, evaluate.

1. $684 - 726$ _____
2. $238 - 543$ _____
3. $-358{,}586 - -31{,}008$ _____
4. $-693{,}487 - -21{,}006$ _____
5. $58.67 - 9.65$ _____
6. $32.99 - 2.58$ _____
7. $\frac{-9}{25} - \frac{-7}{15}$ _____
8. $\frac{-31}{36} - \frac{-17}{27}$ _____
9. $r - r$ _____
10. $v - -v$ _____
11. $-t - -t$ _____
12. $(2 - -2) + (3 - -3)$ _____

PROPERTIES Objective E: Apply properties of addition and subtraction to simplify expressions.

In 13–16, use the Algebraic Definition of Subtraction to rewrite the expression.

13. $56.8 - 381$ _____
14. $41.4 - 234$ _____
15. $-k - r$ _____
16. $\frac{-9}{5} - \frac{3}{4}$ _____

In 17–20, state whether the sentence given below is an example of Algebraic Definition of Subtraction.

17. $z - x = z + -x$ _____
18. $p - -2 = p + 2$ _____
19. $r + 2 = r - -2$ _____
20. $x + -5 = -5 + x$ _____

21. Why is the Algebraic Definition of Subtraction also called the Add-Opp Property?

_____

_____

USES Objective I: Use the Take-Away and Comparison Models for Subtraction to describe situations leading to subtraction.

In 22–27, a situation is given. Write an equation or expression that represents the situation.

22. The most expensive model of a car costs \$32,678. A different model of the car costs C. How much more does the higher-priced model cost? _____

23. A bicycle and a helmet sell for \$239. The bicycle alone costs B. How much does the helmet cost? _____

24. Including interest, a bank account currently has \$2,030. Interest posted to the account during last quarter was I. How much was in the account before the interest was posted? _____

25. The early morning temperature is Q. The historical record for a high temperature on the day is 101. How many degrees must it warm up in order to tie the record? _____

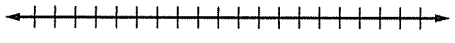
26. During 2006, the stock market's Dow Jones industrial average set a record at 12,011.73. The previous record was R. How much greater was the new record? _____

27. A basic electronic game player will cost G. Accessories will make the game player system cost X. How much extra do the accessories add to the cost of the game player? _____

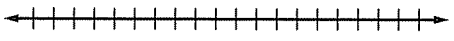
REPRESENTATIONS Objective M: Graph addition and subtraction of positive and negative numbers using arrows on a number line.

In 28–31, draw a picture of the subtraction using arrows, and evaluate the expression.

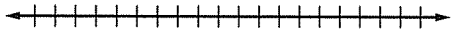
28. $-53 - -41$ _____



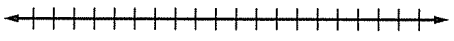
29. $0 - -23$ _____



30. $-20 - 30$ _____



31. $60 - 100$ _____



Name

5-4A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

REPRESENTATIONS Objective K

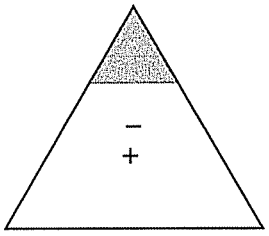
In 1 and 2, draw a fact triangle to depict the relationship among the three values given.

1. $9, -6, 3$

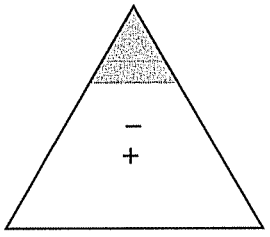
2. $j, -j, 0$

In 3 and 4, fill in the fact triangle using the given equation.

3. $81 - 99 = -18$

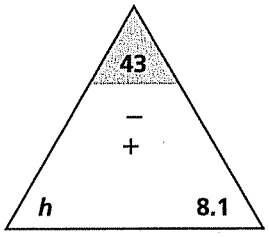


4. $j + -u = 49$



In 5 and 6, write three equations based upon the given fact triangle.

5.



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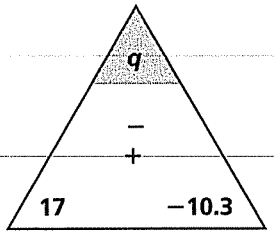


Name

5-4B Lesson Master

REPRESENTATIONS Objective K: Use fact triangles to depict relationships between numbers.

In 1–4, Draw a fact triangle to depict the relationship among the three values given.

1. 3, 5, 8

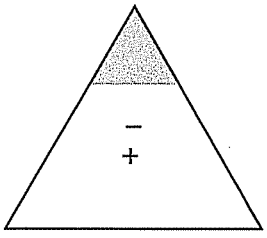
2. −5, 8, 13

3. −12, −7, −5

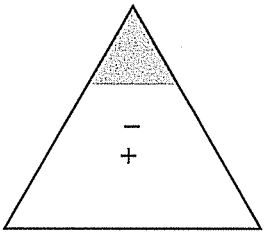
4. $6, j, j + 6$

In 5 and 6, fill in the fact triangle using the given equation.

5. $-11 + -32 = -43$

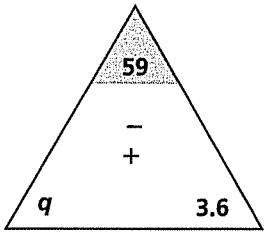


6. $r + -t = 56$

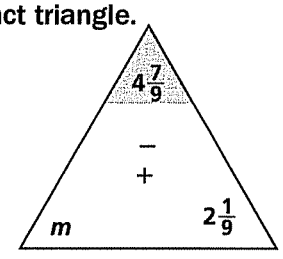


In 7–10, write three equations based upon the given fact triangle.

7.



8.



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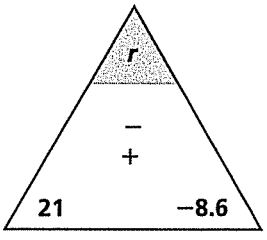

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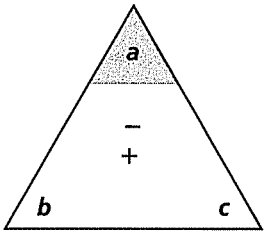
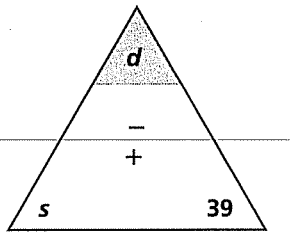


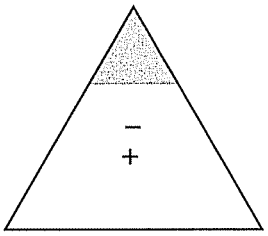
In 11 and 12, use the fact triangle at the right.



11. Write two equations using the information in this fact triangle.

12. Suppose $s = 28$. What value of d makes this fact triangle true?

13. Jayne has D dollars in her bank. She decides to buy a CD that costs C dollars. After buying the CD, she has X dollars left in her bank.



a. Complete the fact triangle for this situation.

b. Write one of the facts as a number sentence and as an English sentence.

14. In a game show, a contestant is asked to choose one of two envelopes. The prize money in one envelope is P; the prize money in the other envelope is Q. The total value of the two prizes is T.

a. Write an addition equation and two subtraction equations to describe this situation.

b. Suppose there is \$575 in one envelope and the total prize money is \$1,325. How much is in the other envelope?

Name

5-5A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective C

Give the property or reason for each step.

1. a. $7 + x = -14$ _____

   b. $-7 + 7 + x = -14 + -7$ _____

   c. $x = -14 + -7$ _____

   d. $x = -21$ _____

In 2–7, solve the equation.

2. $h + 14.3 = 79.1$ _____
3. $j + 0.6 = 3\frac{4}{5}$ _____
4. $q + -7 = 63$ _____
5. $r - 12.1 = -48$ _____
6. $215 + p - 1{,}001 = -9{,}412$ _____
7. $-\frac{17}{18} + u = 4.\overline{3}$ _____

In 8 and 9, a situation is given.
a. Write an equation to describe the situation.
b. Solve the equation.

8. An angle measures 167°. What is the measure of its supplement?

   a. _____

   b. _____

9. Jeff needs to do 45 hours of community work before graduation. He worked at the hospital for $10\frac{1}{2}$ hours, tutored a first-grade student for 15 hours, and cleaned the park for $12\frac{1}{4}$ hours. How many hours of work does he still need to complete?

   a. _____

   b. _____

PROPERTIES Objective F

In 10 and 11, state whether the sentence given below is an example of the Addition Property of Equality.

10. $5t + j = 67;\ 5t + j + -j = 67 + -j$ _____

11. Since $6.\overline{01} = 6\frac{1}{99}$, $6.\overline{01} + 2.3 = 6\frac{1}{99} + 2.3$ _____

Name

5-5B Lesson Master

SKILLS Objective C: Solve equations of the form $x + a = b$ and inequalities of the form $x + a < b$.

In 1 and 2, give the property or reason for each step.

1. a. $5 + y = -7$ _____

   b. $-5 + 5 + y = -7 + -5$ _____

   c. $y = -7 + -5$ _____

   d. $y = -12$ _____

2. a. $10 = r + -6$ _____

   b. $10 + 6 = r + -6 + 6$ _____

   c. $10 + 6 = r$ _____

   d. $16 = r$ _____

In 3–14, solve the equation.

3. $x + 12 = 23$ _____

4. $y + 9.2 = 7.6$ _____

5. $b + 10.8 = 12\frac{4}{5}$ _____

6. $4\frac{4}{5} = c + -3.6$ _____

7. $r + -12 = 72$ _____

8. $t + -9 = 7$ _____

9. $x - 36.2 = 18.9$ _____

10. $y - 24.1 = -22.8$ _____

11. $413 + w - 6{,}421 = -2{,}000$ _____

12. $-811 + v + -6{,}328 = -8{,}428$ _____

13. $\frac{-5}{18} + g = 4.\overline{1}$ _____

14. $19.25 = h - -2\frac{7}{8}$ _____

In 15–17, a situation is given.
a. Write an equation to describe the situation.
b. Solve your equation.

15. An angle measures 45°. What is the measure of its complement?

    a. _____

    b. _____

16. Heather is continuing her family's thimble collection. On January 1, her aunt gave her the collection of 281 thimbles. Heather will buy 2 thimbles each year. She asked to receive 3 thimbles as presents throughout the year. How many thimbles will Heather have after 5 years?

    a. _____

    b. _____

17. Carl is the publisher of a small weekly newspaper. His salary plus the salaries of his 2 assistants add up to $105,000 per year. Business expenses are $5,340 per year. He receives $17,500 in subscriptions and the rest of the money comes from advertising. He has sold $54,602 worth of ads so far this year. How much more must he earn from the advertising in order to meet this year's expenses?

    a. _____

    b. _____

PROPERTIES Objective F: Recognize uses of the Commutative and Associative Properties of Addition and the Addition Property of Equality.

In 18–21, state whether the sentence given below is an example of the Addition Property of Equality.

18. $6r + q = 84;\ 6r + q + -q = 84 + -q$ _____

19. If $\frac{5}{9} = 0.\overline{5}$ then $-4.8 + \frac{5}{9} = 0.\overline{5} + -4.8$ _____

20. If $-x = y$, then $-x + 2 = y + -2$ _____

21. $(x + y) + z = x + (y + z)$ _____

Name

5-6A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective C

1. Give the reason for each step of the solution.

   a. $r - 41 < 99$ _____

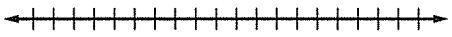
   b. $r - 41 + 41 < 99 + 41$ _____

   c. $r + 0 < 99 + 41$ _____

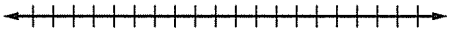
   d. $r < 140$ _____

In 2–7, solve and graph your solution on the given number line.

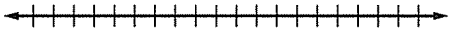
2. $h + 4\frac{4}{7} < 6$ _____



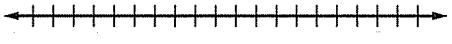
3. $j + 3.9 > -1\frac{1}{2}$ _____



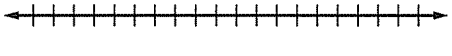
4. $q + -18.3 \geq 45$ _____



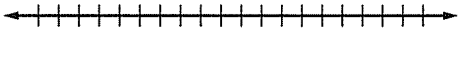
5. $m - 12.1 < -17$ _____



6. $-4.08 + p \leq -9.61$ _____



7. $u - -2.7 \geq 5.1$ _____



8. *Multiple choice.* Which of the following are solutions to $-12.4 + x \geq -16.3$? There may be more than one correct answer. _____

   A 3.9 **B** −3.9 **C** 0 **D** −28.7

9. Yolanda wants to have at least $450 in her savings account to pay for a class trip. She now has $297.54 and knows that her grandmother will give her $125 on her next birthday. How much more money does she need to reach her goal?

   a. Write an inequality to answer the question.

   _____

   b. Solve your inequality.

   _____

Name

5-6B Lesson Master

SKILLS Objective C: Solve equations of the form $x + a = b$ and inequalities of the form $x + a < b$.

In 1 and 2, give the reason for each step of the solution.

1. a. $x + 3.4 < -6.8$ _____

   b. $x + 3.4 + -3.4 < -6.8 + -3.4$ _____

   c. $x < -6.8 + -3.4$ _____

   d. $x < -10.2$ _____

2. a. $4\frac{3}{4} \leq -5.2 + y$ _____

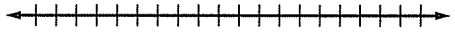
   b. $4\frac{3}{4} + 5.2 \leq -5.2 + 5.2 + y$ _____

   c. $4\frac{3}{4} + 5.2 \leq y$ _____

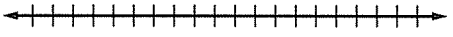
   d. $9.95 \leq y$ _____

In 3–8, solve and graph your solution on the given number line.

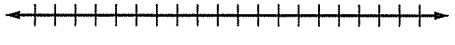
3. $m + 5\frac{3}{8} < 9$ _____



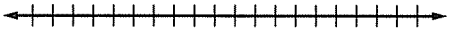
4. $n + 2.8 > 2\frac{4}{5}$ _____



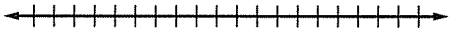
5. $p + -3 \geq -5$ _____



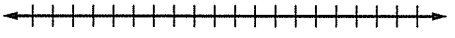
6. $q + -8 \leq -6$ _____



7. $h + -6\frac{1}{8} \leq -6\frac{1}{8}$ _____

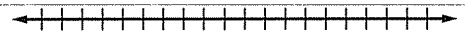


8. $r + -7.3 > 6.24$ _____



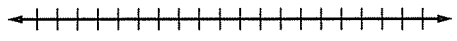
In 9–14, solve and graph your solution on the given number line.

9. $s + 8.8 < 4.76$ _____

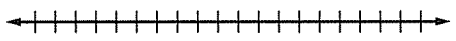


10. $t + 12.3 > 9\frac{3}{10}$ _____

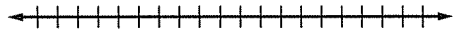
11. $u + -8.01 \geq -8.01$ _____



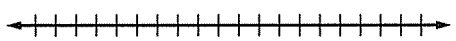
12. $v + -9.4 \geq -6.2$ _____



13. $w + 18.68 \leq 12.4$ _____



14. $x + 3 < 8 - 5$ _____



15. *Multiple choice.* Which of the following are solutions to $-21.3 + x < 1.3$? There may be more than one correct answer. _____

A -20 B 20 C -22.6

D 22.6 E 40 F -40

16. Shyamala will be able to visit an out-of-town friend this summer if she saves up some money. The trip will cost at least \$150. So far, she has saved \$52, and she expects to save \$6 each week from her allowance. If the trip will take place 9 weeks from today, how much more money will Shyamala need at the time she leaves for the trip?

a. Write an inequality to answer the question.

_____

_____

b. Solve your inequality. _____

17. John has scores of 98, 88, 95, 85, and 92 on five math tests. His total number of points for six tests must be at least 546 in order for his average score to be at least 91. What score must he get on the sixth test to achieve his goal?

a. Write an inequality to answer the question.

_____

_____

b. Solve your inequality. _____

Name

5-7A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

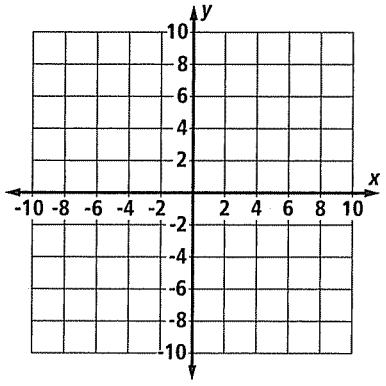
REPRESENTATIONS Objective N

1. a. Use a fact triangle to solve the equation $x - y = -6$ for y.

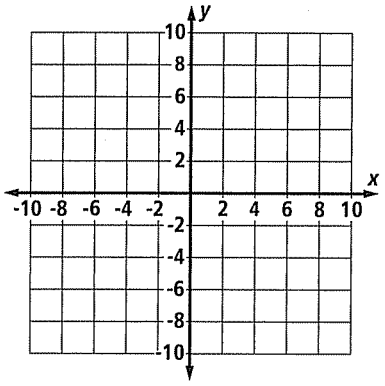
   b. Is the point $(-13, -7)$ on the line of equation $x - y = -6$? Justify your answer.

In 2–7, graph the line with the given equation.

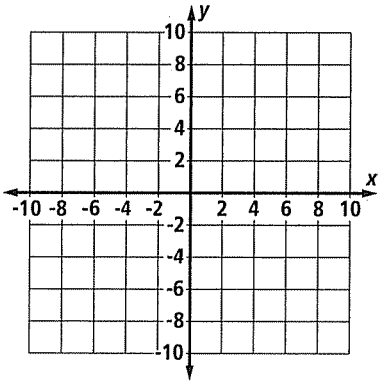
2. $x + y = -2$



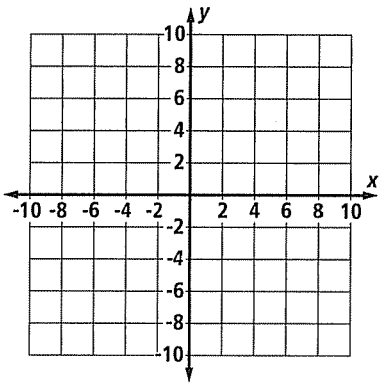
3. $x - y = 4$



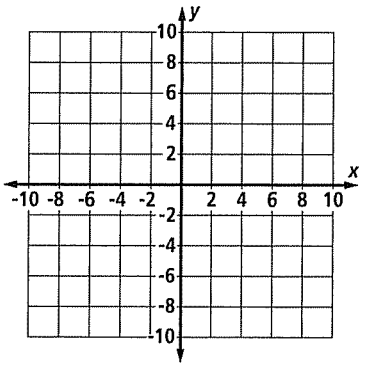
4. $y = x + 5$



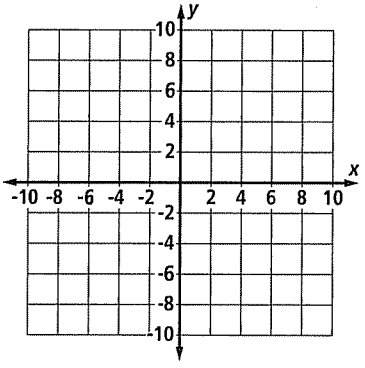
5. $x = 9 - y$



6. $-3 = x + y$



7. $-6 + x = 2 - y$



Name

5-7B Lesson Master

REPRESENTATIONS Objective N: Graph solutions to equations of the form $x + y = k$ or $x - y = k$.

1. a. Use a fact triangle to solve the equation $x + y = 1$ for y. _____

   b. Is the point (16, −15) on the line of equation $x + y = 1$? Justify your answer.

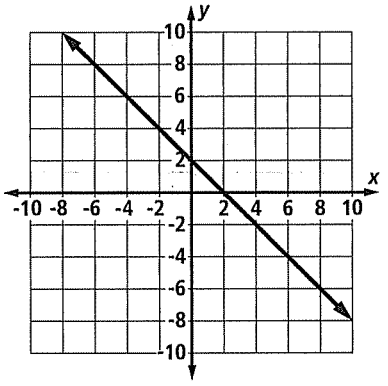
   _____

   _____

2. Examine the graph of $x + y = 2$ in the graph at the right.

   a. Where does the line cross the x-axis? _____

   b. Where does the line cross the y-axis? _____



3. Graph $x - y = 8$ by following Parts a through e.

   a. If $x = 0$, what is the value of y? _____

   b. Write the coordinates in Part a as an ordered pair.

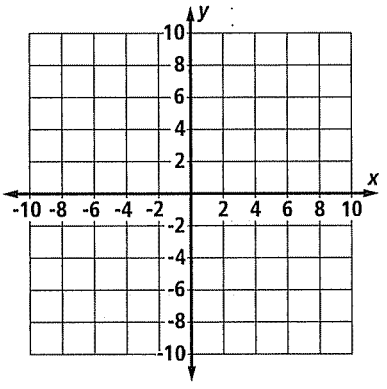
   _____

   c. If $y = 0$, what is the value of x? _____

   d. Write the coordinates in Part c as an ordered pair.

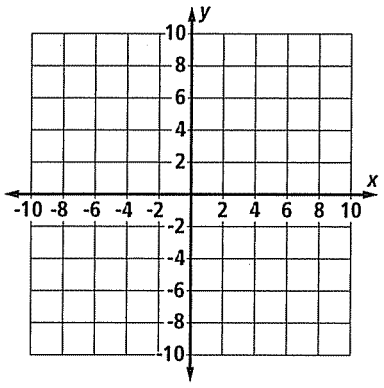
   _____

   e. Graph the two points in Parts b and d, then draw a line through the two points.

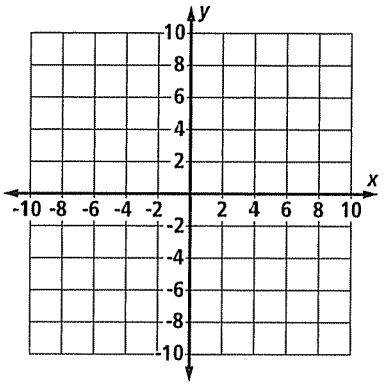


In 4–9, graph the line with the given equation.

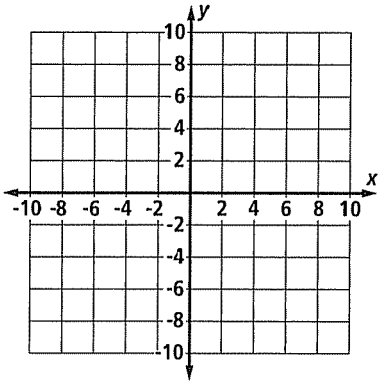
4. $x + y = 2$



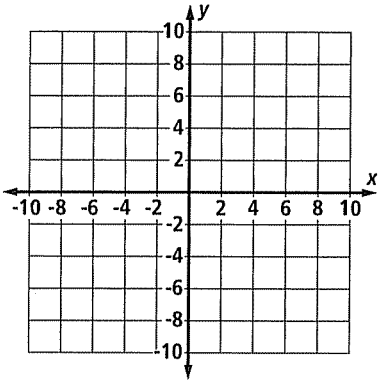
5. $x + y = -6$



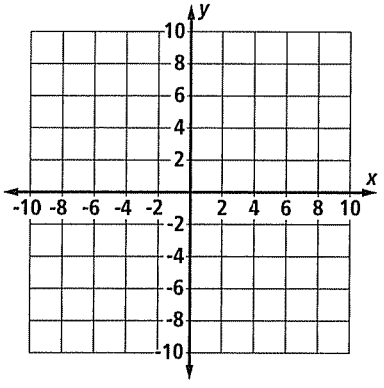
6. $x - y = 9$



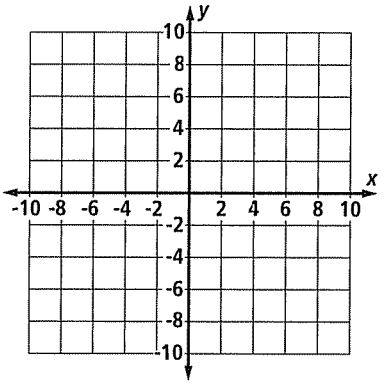
7. $x = 4 - y$



8. $-7 = x + y$



9. $-5 + x = 3 - y$



Name

5-8A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

USES Objective H

1. 300 tickets are sold for a single-drawing charity benefit raffle. Elise bought 23 tickets and Mario bought 9 tickets. What is the probability that one of them will win?

2. A sports fan boldly predicts that there's a 95% chance that his team will win the championship. Let E be the event that his team wins.

   a. Describe the event that is the complement of E.

   b. Give the probability of the event from Part a.

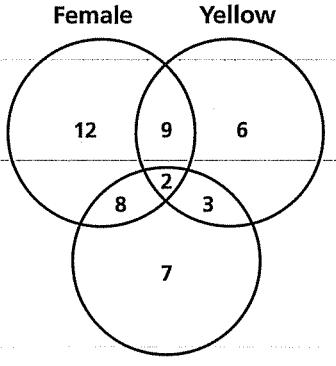
3. On a twenty-sided die (each side numbered, 1 through 20), what is the probability of rolling either a multiple of 7 or a multiple of 3?

4. A gumball machine has cherry-, grape-, and watermelon-flavored gumballs. Janice dislikes watermelon, but would like either of the other two flavors. Looking at the outside of the machine, she estimates that $\frac{1}{5}$ of the gumballs are grape-flavored and $\frac{2}{5}$ of the gumballs are cherry-flavored. Does she have better than a 50% chance of getting a gumball she likes? Explain your answer.

5. A standard deck of 52 cards includes 13 hearts and 4 queens (including the queen of hearts). If a card is drawn at random from a standard deck of 52 cards, what is the probability of drawing either a heart or a queen?

6. Ted's Trucks has 120 trucks in its lot. Eighty-two have 4-wheel drive, 39 are red, and 10 are both red and have 4-wheel drive. What is the probability that a truck chosen at random from this lot has 4-wheel drive and is not red?

7. The Venn diagram at the right shows Labrador Retriever puppies that are for sale. What is the probability that a puppy chosen at random is under 6 months old, is female, but is not yellow?



Name

5-8B Lesson Master

USES Objective H: Calculate probabilities involving mutually exclusive events or events with overlap.

1. The land area of Earth is about 57,510,000 square miles, and the water surface area is about 139,440,000 square miles. To the nearest tenth of a percent, find the probability that a meteor hitting Earth will **a.** fall on land and **b.** fall on water.

   a. _____ b. _____

   c. The events in Parts a and b above are called _____ _____ events.

2. Irma has a miniature souvenir spoon collection with spoons from the United States and other countries. Her collection includes 85 from the United States, 52 from Europe, 31 from Asia, 20 from Central America, and 12 from South America. What is the probability that a spoon picked at random is from Europe? _____

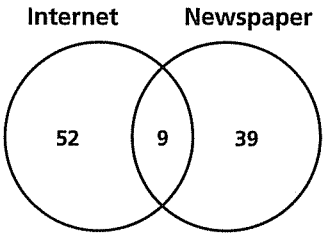
3. On a twenty-sided die (showing the numbers 1 through 20), the probability of rolling any individual number is 5%. Let G be the event rolling a 2.

   a. Write a description of the complement of G.

   _____

   b. What is the probability of rolling a number in the complement of G? _____

4. Milky Milk has run advertisements on the Internet and in newspapers. The Venn diagram at the right shows the results of a survey of 100 people who read an ad for Milky Milk on the Internet, in a newspaper, or both. If one of these people is chosen at random, what is the probability that the person



   a. read the ad on the Internet?

   b. read the ad in a newspaper, but not on the Internet?

   c. read the ad both on the Internet and in a newspaper?

   a. _____ b. _____ c. _____

5. A standard deck of 52 cards includes 4 kings. If a card is drawn at random, what is the probability of drawing a king? _____

6. A standard deck of 52 cards includes 13 diamonds. If a card is drawn at random, what is the probability of drawing a diamond? _____

7. Suppose a card is drawn at random from a standard deck of cards.
   a. What is the probability of drawing a king or a diamond?
   b. Explain why the probability in Part a is not $\frac{17}{52}$, the sum of $\frac{4}{52}$ and $\frac{13}{52}$.

   a. _____

   b. _____

   _____

8. Twenty students in Mr. Erickson's seventh-grade class know how to play checkers. Nine know how to play chess. Three of the students know how to play both.

   a. Draw a Venn diagram to show how many students are in each region.

   b. If one of the students is selected, what is the probability that the student knows how to play chess, but not checkers.

   _____

9. Fifty girls at Benny Middle School participate in basketball or volleyball. Of the 50 girls, 27 play basketball. Of those 27 girls, 14 play both basketball and volleyball.

   a. Draw a Venn diagram to illustrate the situation.

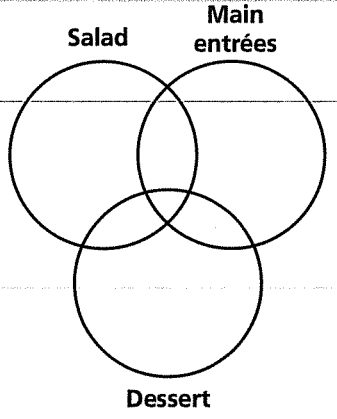
   b. If a girl is selected at random, what is the probability that she is both a basketball and volleyball player?

   _____

10. A class of 35 students go to a party at a buffet restaurant, as described.

    17 go to the salad bar and also eat a main entrée.
    4 eat a main entrée and from the dessert bar.
    3 eat salad and dessert, while 3 eat salad, a main entrée, and dessert.
    26 students in all eat salad and 10 students in all eat dessert.

    Using the Venn diagram at the right, fill in the information and answer the questions.



   a. How many eat only from the entrées? _____

   b. How many eat only salad? _____

   c. What is the probability of finding a student who eats only dessert?

   _____

Name

5-9A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

SKILLS Objective D

In 1–4, use a straightedge and compass to construct triangles using the segments below.

1. lengths a, b, and c

a _____
b _____
c _____

2. lengths h, i, and j

h _____
i _____
j _____

3. lengths x, y, and z

x _____
y _____
z _____

4. lengths d, e, and f

d _____
e _____
f _____

In 5 and 6, use a ruler and compass to construct triangles with sides of the specified lengths.

5. 2 cm, 5 cm, 6 cm

6. two sides of length 2 in.

Name

5-9B Lesson Master

SKILLS Objective D: Construct triangles using a compass and a straightedge.

In 1–4, use a straightedge and compass to construct triangles using the segments below.

1. lengths a, b, and c

a _____
b _____
c _____

2. lengths d, e, and f

d _____
e _____
f _____

3. lengths g, h, and i

g _____
h _____
i _____

4. lengths j, k, and p

j _____
k _____
p _____

In 5 and 6, use a ruler and compass to construct triangles with sides of the specified lengths.

5. 2 cm, 7 cm, 8 cm

6. two sides of length 3 in.

In 7 and 8, use the segments with lengths *j* and *b* at the right.

j ———————

b ———

7. Construct a segment whose length is *j* in the space below.

8. On the same working line, construct a segment $\overline{AC}$ whose length is $j + b$.

9. Construct a segment $\overline{XZ}$ that is $r + s$ in length.

r ———————————————

s ———————————

10. Construct a segment $\overline{LN}$ that is $r - s$ in length.

Name

5-10A Lesson Master

Questions on SPUR Objectives
See pages 352–355 for objectives.

USES Objective J

In 1–4, the lengths of two sides of a triangle are given. Complete the following for each triangle:

a. The length of the third side must be greater than _?_ and less than _?_.

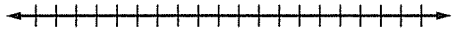
b. Write your solution as a double inequality.

c. Graph your solution on a number line.

1. 2 in. and 8 in.

   a. _____

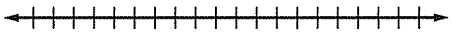
   b. _____

   c. 

2. 4,351 feet and 8,561 feet

   a. _____

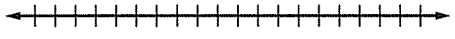
   b. _____

   c. 

3. 0.25 m and 0.6 m

   a. _____

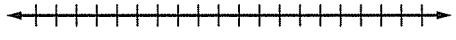
   b. _____

   c. 

4. 2.3 mm and 23 mm

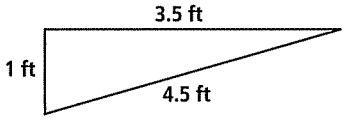
   a. _____

   b. _____

   c. 

In 5 and 6, state whether the triangle with sides of the given length could exist. Justify your answer.

5. _____



6. 12 m, 16 m, 6 m

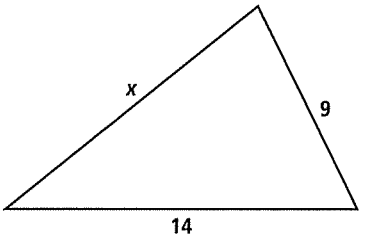
Name

5-10B Lesson Master

Questions on SPUR Objectives

USES Objective J: Use the Triangle Inequality to approximate lengths of the third side of a triangle given the lengths of the other two sides.

In 1–3, use the triangle at the right.



1. Write 3 inequalities based on the Triangle Inequality.

   a. _____

   b. _____

   c. _____

2. Solve each inequality.

   a. _____ b. _____ c. _____

3. One of the inequalities in Question 2 involves a negative number. Since the length of a side of a triangle cannot be negative, what restrictions do the remaining two inequalities put on x? _____

In 4–7, the lengths of two sides of a triangle are given. Complete the following for each triangle:

a. The length of the third side must be greater than ___?___ and less than ___?___.

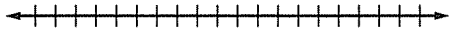
b. Write your solution as a double inequality.

c. Graph your solution on a number line.

4. 4 in. and 12 in.

   a. _____ _____

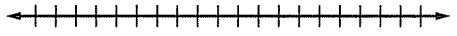
   b. _____

   c. 

5. 12,632 ft and 9,481 ft

   a. _____ _____

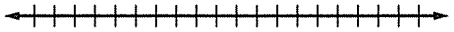
   b. _____

   c. 

6. $3\frac{3}{5}$ mi and $8\frac{6}{7}$ mi

   a. _____ _____

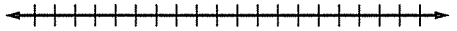
   b. _____

   c. 

7. 4.21 m and 7.85 m

   a. _____ _____

   b. _____

   c. 

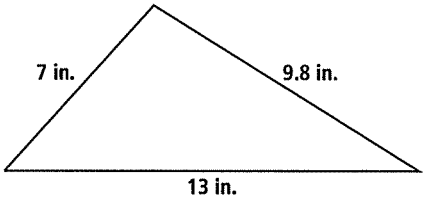
Name

5-10B

In 8–11, state whether the triangle with sides of the given lengths could exist. Justify your answer.

8. _____

9. _____



10. $8\frac{2}{3}$ ft, $14\frac{3}{4}$ ft, $22\frac{7}{8}$ ft

11. 11 mm, 12 mm, 27 mm

12. If Alexandro lives 1.6 miles from Athanasia and 2.3 miles from Kaitlyn, give a range for the possible distance that Athanasia lives from Kaitlyn. Write your answer as a double inequality. _____

13. Steve travels west 0.8 mile from home to the library. Then he travels in a different direction 0.9 mile to the skateboard park. Then he "completes the triangle" and goes home. Write each of the following answers as a double inequality:

    a. What is the range of the possible distances from the skateboard park to home? _____

    b. What is the range of the total possible distances of Steve's entire trip? _____

14. Write three statements using the Triangle Inequality, based on the triangle at the right.