Name

3-1A Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

REPRESENTATIONS Objective E

1. Suppose you are hiking up a large mountain. Your initial elevation is 300 ft above sea level. For every hour you hike your elevation increases by 350 ft.

   a. Write an equation relating your elevation to the number of hours you have hiked. _____

   b. Complete the table at the right.

Hours hiked	Elevation
0	
1	
2	
3	
4	
5	

   c. What is your elevation after hiking for 4 hours? _____

   d. If you were to graph the relationship between hours hiked and elevation, would your graph be discrete or continuous? _____

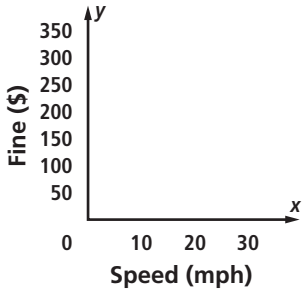
2. Suppose a judge decided to fine speeders $50 plus $10 for every mile per hour they were driving in excess of the highway speed limit.

   a. Write an equation relating the excess speed of the offenders to the fine they incur. _____

   b. Complete the table below.

Excess Speed (mph)	Fine ($)
5	
10	
15	
20	
25	
30	

   c. Plot fine vs. speed on the grid below.



   d. How much over the speed limit was Jared driving if he received a fine of $250? Label this point on the grid in Part c. _____

Name

3-2B Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

USES Objective D

In 1–9, a situation is given. Define the variable and represent the relationship with an equation.

1. Alicia works 15 hours a week. She has already worked 30 hours this month. How many more weeks must she work to have a total of 120 hours?

2. When Steve travels on business, he is allowed $35 a day for meals and $0.75 per mile car allowance. His salary for one day is $150. How far did he travel if he was paid $335 for a day's work?

3. One type of bamboo plant can grow 20 feet in one month. The plant was 5 feet tall when planted. At this rate, how long will it take the plant to reach a height of 70 feet?

4. Joel washes 3 loads of laundry a week. He has washed 9 loads since buying a jug of liquid detergent that that will wash 39 loads. How many more weeks of laundry can he do before he needs to buy more detergent?

5. Nishan purchased a gumball machine that holds 100 gumballs. Each day, she removes 3 gumballs. After how many days will the machine have 49 gumballs left?

6. Vijay saved $150 to buy DVDs. After he paid $22 each for some DVDs, he had $40 left. How many DVDs did he buy?

7. Joeal bought 8 breakfast muffins for her friends with a $20 bill. The sales clerk handed her $9.68 in change. What was the cost of each muffin?

8. Anastasia is saving for a laptop computer. She already has $450 saved and plans to save $25 a week from her baby-sitting money. If the laptop she wants costs $1,150, how many weeks will it take her to save enough to buy it?

Name

3-2B page 2

9. Jake cleaned all the carpets in his apartment. Rental of a rug shampooer was $34.99 a day, rug shampoo was $16.99, and tax was $10.37. His total bill was $132.33. How many days did he rent the rug shampooer?

REPRESENTATIONS Objective E

In 10 and 11, solve the equation by making a table.

10. $-2 = 5x - 7$

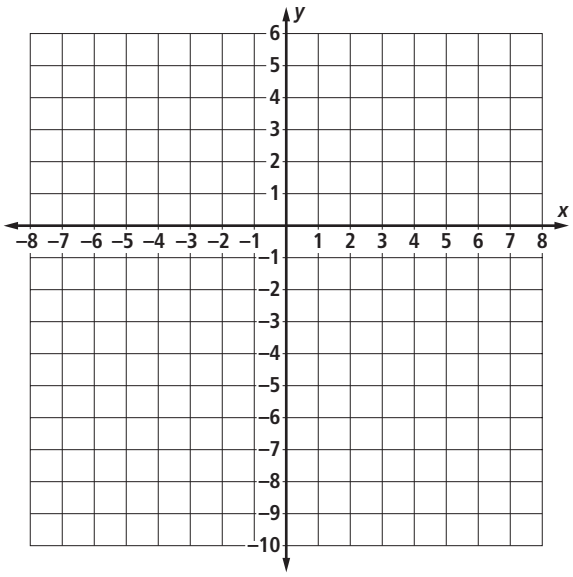
x	$5x - 7$	y
−2		
−1		
0		
1		
2		

11. $-7x + 15 = 1$

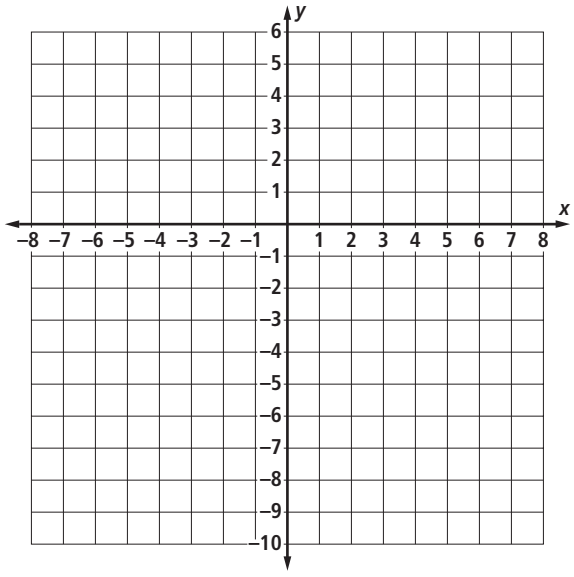
x	$-7x + 15$	y
0		
1		
2		
3		
4		

In 12 and 13, solve the equation by making a graph and drawing lines from the *y*-axis to the graph, and then to the *x*-axis to indicate the solution.

12. $3x + 7 = -8$



13. $-10 = -4x + 2$



Name

3-4B Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

SKILLS Objective A

In 1–15, solve and check. Show your work.

1. $5x + 16 = 1$
2. $-2 + 7a = 19$
3. $-56 = 12b - 8$
4. $18 - 11c = -26$
5. $(5 + d) + -3 = -8$
6. $(4e + 1) - 7 = 22$
7. $13 + (2 - f) = -6$
8. $1\frac{1}{2}g + 3\frac{3}{4} = -2\frac{1}{4}$
9. $2\frac{3}{8} = \frac{7}{8}h - \frac{1}{4}$
10. $3.24k + 1.35 = 17.55$
11. $0.062 = 0.06m - 0.01$
12. $9n - 5 - 3n = 61$
13. $4p - 7 + 3p = -7$
14. $7(r + 6) + 2 = -26$
15. $4 - 3(w - 1) = 10$

USES Objective D

In 16–22, a situation is given.
a. Write an equation to describe the situation and identify what the variable represents.
b. Solve the equation and answer the question.

16. Carter plans to save \$70 a month for a new computer and printer that cost \$1,330 before tax. So far, he has saved \$490. How long will it take him to save enough money to buy the computer and printer?

a. _____

b. _____

Name _____

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17. Isabella purchased some compact discs on sale for $16.99 each. She also purchased a new video for $25.99. The total before tax was $76.96. How many compact discs did she purchase?

a. _____

b. _____

18. Mrs. Anderson bought a combination pack of printer cartridges for $49.95 and several packages of printer paper for $5.99 a package. Her total cost before taxes was $67.92. How many packages of paper did she buy?

a. _____

b. _____

19. The length of rectangular patio is 16 feet. The present width of the patio is 10 feet, but the owner wants to make the patio wider. How many feet must be added to the width so the new area of the patio is 288 square feet?

a. _____

b. _____

20. A local hardware store sells 4×4 sheets of plywood for $6.79 each. Before tax, Daniel spent a total of $87.25 on plywood and a box of nails that cost $5.77. How many sheets of plywood did he purchase?

a. _____

b. _____

21. A 150-gallon aquarium contains 20 gallons of water. If it is filled at a rate of 2 gallons per minute, how many minutes will it take to completely fill the aquarium?

a. _____

b. _____

22. A thrift shop sells costumes for d dollars. Today they are discounted at a rate of $7 each. Maryellen purchases 3 discounted costumes and a wig that costs $12. What is the original cost of the costumes if Maryellen spends a total of $51?

a. _____

b. _____

Name

3-5B Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

SKILLS Objective A

In 1–15, solve and check. Show your work.

1. $8x + -12x = 32$
2. $-41 = 6x + 7 - 18x$
3. $3(a + 10) = 15$
4. $\frac{5}{6}(12 - 5b) = 35$
5. $10 = \frac{2}{3}m - \frac{3}{2}m$
6. $\frac{2}{9}n + n = 4\frac{8}{9}$
7. $3.4c - (5c + 1) = -12.2$
8. $0.45(d - 1.2) + 0.67 = 5.53$
9. $-9e + 3.1 + 5e - 7.1 = 8$
10. $6(x - 1) - (x + 2) = -18$
11. $15 - 3(2 - f) - f = 19$
12. $99 = \frac{3}{8}(g + 2) + 12(g + 2)$
13. $-12 = -(3h - 1) + 4(2 - h)$
14. $7(k + 3) - 6(k + 3) = -6$
15. $6.1(x - 8) + 2.3(8 - x) = 7.6$

Name

USES Objective D

In 16–20, a situation is given.
a. Write an equation to describe the situation and identify what the variable represents if necessary.
b. Solve the equation and answer the question.

16. Braden, Brooke, and Brett work at a bike shop. Braden works h hours a week. Brooke works 5 more hours than Braden in a week. Brett works twice as many hours as Braden in a week. How many hours does Braden work in a week if altogether they work a total of 33 hours?

a. _____

b. _____

17. Nancy has 60 feet of fencing to enclose a run for her dog, Daisy. She wants the run to be twice as long as it is wide. What dimensions should she use for the dog run?

a. _____

b. _____

18. Philip purchased s pairs of shoes for the school year. He also purchased jeans and T-shirts. The number of pairs of jeans is 3 more than the number of pairs of shoes and the number of T-shirts is twice as many as the number of pairs of jeans. How many shoes did he purchase if he purchased a total of 17 items?

a. _____

b. _____

19. Gary is planning to build a wooden deck shaped like a trapezoid. For cost reasons, he wants the area to be 240 square feet. The height of the trapezoid will be 12 feet and the shorter side will be 16 feet shorter than the longer side. Use the formula $A = 0.5h(b_1 + b_2)$ to find the length of the shorter and longer sides of the deck.

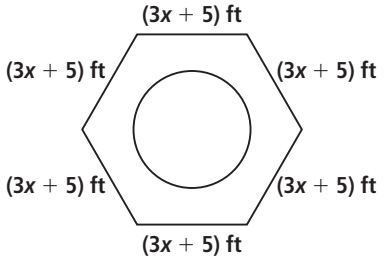
a. _____

b. _____

20. A deck is built around a pool. What is the value of x if the perimeter of the deck is 84 feet?

a. _____

b. _____



Name

3-6B Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

PROPERTIES Objective C

1. What value of k will make the statement true?
If $x > y$ then $kx < ky$. _____

2. What inequality results if both sides of $7m \leq 14$ are multiplied by $\frac{1}{7}$? _____

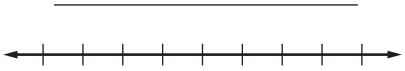
3. What should both sides of $\frac{2}{3}n > \frac{5}{6}$ be multiplied by to get $n > \frac{5}{4}$? _____

4. What should both sides of $-5p \leq \frac{3}{5}$ be multiplied by to get $p \geq \frac{-3}{25}$? _____

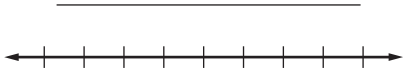
REPRESENTATIONS Objective C and F

In 5–19, solve the inequality and graph the solution.

5. $13a > -65$

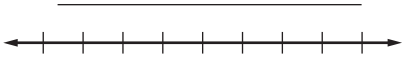


6. $-2c > 10$

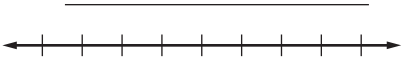


7. $-\frac{3}{4}(2e - 6e) \geq 9$

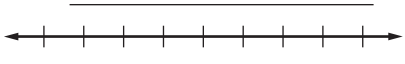
8. $24b \leq 3$



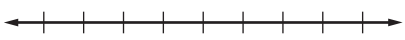
9. $30 < \frac{2}{5}(d + 4d)$



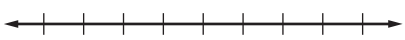
10. $-\frac{7}{4}f \leq 9 + 5$



11. $15 > -2(3g)$



12. $8(-6k) < 90 + 6$

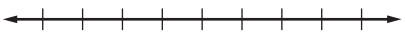


Name

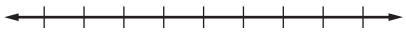
3-6B **page 2**

13. $-1.8n < 7.2$

14. $-7(-4h) \leq 56$



15. $3.2m \geq -17.28$



16. $0.2p \leq 8.1 - 6.4$

17. $-8r + 5r > 11 + 4$

18. $t - \frac{1}{4}t < 9$

19. $6 + 8 > 7w$

Name

3-7A Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

SKILLS Objective B

In 1–6, solve the inequality and check your answer. Show your work.

1. $3w + 5 \leq 14$

2. $\frac{2}{3}(1 - a) \geq 4$

3. $10 < 1.7b + 3.5$

4. $\frac{-1}{2}(4z - 30) + 2(6z - 50) \leq 68$

5. $\frac{2}{3}k + \frac{3}{2} < \frac{1}{6}$

6. $3 > 5r - 7(r + 1)$

USES Objective D

7. The velocity, in feet per second, of an object fired directly upward is given by $v = 120 - 32t$, where t is the number of seconds. When will the velocity be less than 32 feet per second? _____

8. You have \$40,000 to invest and want to earn at least \$2,400 in interest. A bank will pay you 5% simple interest. Your brother needs money for his business and will pay you 9% interest. You want to reduce your risk by lending as little to your brother as possible. If you lend your brother x dollars, then you will have \$40,000 $- x$ to invest in the bank.

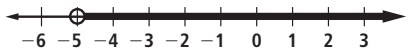
   a. Write an inequality to describe the investments you need to make to earn at least \$2,400 in interest. _____

   b. How little can you lend to your brother and still make your investment goal? _____

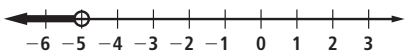
REPRESENTATIONS Objective F

9. *Multiple Choice*. Which of the graphs below shows the solutions of $-4 - 2n \geq 6$? _____

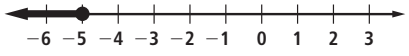
A



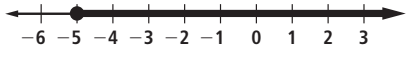
B



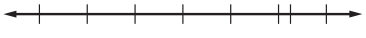
C



D



10. Graph all solutions to the inequality in Question 4 above.



Name

3-8B Lesson Master

Questions on SPUR Objectives
See pages 178–179 for objectives.

SKILLS Objective B

In 1–8, solve by clearing the fractions or decimals.

1. $1.05x + 3.57 = 0.42$

2. $5.01x - 1.1 = -53.204$

3. $-\frac{2}{5}m + \frac{1}{6} = \frac{3}{2}$

4. $-3 = \frac{6}{7}n - \frac{2}{3}n$

5. $3.15 - 3.2p < 4.59$

6. $\frac{3}{8}(2s - 7) > \frac{7}{16}$

7. $-9.1r + 7.21 + 12r \geq -26.285$

8. $\frac{5}{6} \geq \frac{1}{4}\left(\frac{2}{3}w + 1\right) - \frac{1}{12}$

PROPERTIES Objective C

In 9 and 10, use $\frac{3}{11}x - \frac{1}{3} = \frac{5}{6}$ to answer the questions.

9. What is the smallest number you can multiply each side of the equation by to clear the fractions?

10. Use your answer to Question 9 to solve the equation for x.

11. What has been done to $0.701m = -5.5$ to get $701m = -5{,}500$?

USES Objective D

In 12–18, write and solve an equation or inequality to describe the situation and answer the question.

Mallory has saved x half-dollars. She has four times as many quarters as half-dollars. The total she has saved is $61.50.

12. How many half-dollars does she have?

Name

3-8B page 2

13. How many quarters does she have?

Tony, Dominic, and Joseph purchased a party submarine sandwich. Tony ate $\frac{1}{4}$ of the pieces; Dominic and Joseph each ate $\frac{1}{6}$ of the pieces. There were 5 pieces left.

14. How many total pieces were there originally?

15. How many pieces did each of the boys eat?

A serving of cereal with milk provides *x*% of the daily allowance of vitamin C. A serving of orange juice provides 5 times as much vitamin C as the cereal with milk. If the two items are eaten together, they provide 144% of the daily allowance of vitamin C.

16. What percent of the daily allowance of vitamin C does the cereal with milk provide?

17. What percent of the daily allowance of vitamin C does the orange juice provide?

18. A multivitamin provides 417% of the daily allowance of vitamin C. Your answer to Question 17 represents the percent of vitamin C in one serving of orange juice. What is the least number of servings, *s*, of orange juice you must drink to get at least the same amount of vitamin C found in the multivitamin?