Lesson Check

Do you know HOW?

1. Is (2, 4) a solution of the equation $y = x - 2$?
2. Is $(-3, -9)$ a solution of the equation $y = 3x$?
3. Drinks at the fair cost $2.50. Use a table, an equation, and a graph to represent the relationship between the number of drinks bought and the cost.
4. **Exercise** On a treadmill, you burn 11 Cal in 1 min, 22 Cal in 2 min, 33 Cal in 3 min, and so on. How many Calories do you burn in 10 min?

Do you UNDERSTAND? MATHEMATICAL PRACTICES

5. **Vocabulary** Describe the difference between inductive reasoning and deductive reasoning.
6. **Compare and Contrast** How is writing an equation to represent a situation involving two variables similar to writing an equation to represent a situation involving only one variable? How are they different?
7. **Reasoning** Which of (3, 5), (4, 6), (5, 7), and (6, 8) are solutions of $y = x + 2$? What is the pattern in the solutions of $y = x + 2$?

Practice and Problem-Solving Exercises MATHEMATICAL PRACTICES

A Practice

Tell whether the given equation has the ordered pair as a solution. See Problem 1.

8. $y = x + 6$; (0, 6)
9. $y = 1 - x$; (2, 1)
10. $y = -x + 3$; (4, 1)
11. $y = 6x$; (3, 16)
12. $-x = y$; (−3.1, 3.1)
13. $y = -4x$; (−2, 8)
14. $y = x + \frac{2}{3}$; $\left(1, \frac{1}{3}\right)$
15. $y = x - \frac{3}{4}$; $\left(2, 1\frac{1}{4}\right)$
16. $\frac{x}{5} = y$; (−10, −2)

Use a table, an equation, and a graph to represent each relationship. See Problem 2.

17. Ty is 3 years younger than Bea.
18. The number of checkers is 24 times the number of checkerboards.
19. The number of triangles is $\frac{1}{3}$ the number of sides.
20. Gavin makes $8.50 for each lawn he mows.

Use the table to draw a graph and answer the question. See Problem 3.

21. The table shows the height in inches of stacks of tires. Extend the pattern. What is the height of a stack of 7 tires?

Stacks of Tires

Number of Tires, x	Height of Stack, y
1	8
2	16
3	24
4	32

22. The table shows the length in centimeters of a scarf you are knitting. Suppose the pattern continues. How long is the scarf after 8 days?

Knitted Scarf

Number of Days, x	Length of Scarf, y
1	12.5
2	14.5
3	16.5
4	18.5

Use the table to write an equation and answer the question.

23. The table shows the heights in inches of trees after they have been planted. What is the height of a tree that is 64 in. tall in its pot?

Tree Height

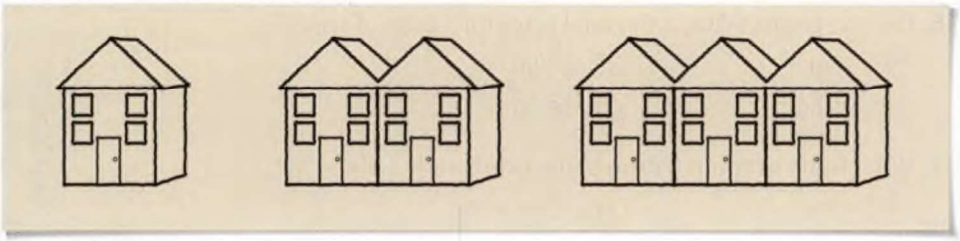
Height in Pot, x	Height Without Pot, y
30	18
36	24
42	30
48	36

24. The table shows amounts earned for pet sitting. How much is earned for a 9-day job?

Pet Sitting

Days, x	Dollars, y
1	17
2	34
3	51
4	68

Refer to the drawing of houses for Exercises 25 and 26.



25. Patterns Make a table and draw a graph to show the relationship between the number of houses and the number of windows.

a. What is the number of windows in 9 houses?

b. If n houses have k windows, write an expression to represent the number of windows for $n + 1$ houses.

26. Bobby says that a subdivision similar to the one above has a total of 202 windows. Is 202 a reasonable number of windows? Explain.

B Apply

Tell whether the given ordered pair is a solution of the equation.

27. $y = 2x + 7; (-2, 3)$

28. $-\frac{1}{4}x + 6 = y; (2, 4)$

29. $y = -1.2x - 2.6; (3.5, 6.8)$

30. Think About a Plan The table shows how long it takes Kayla to learn new songs. How many hours does Kayla need to practice to learn 9 songs?

- From row to row, how much does the number of hours h increase? How much does the number of songs s increase?
- By how many rows would you need to extend the table to solve the problem?

Kayla's Piano Practice

Hours, h	Songs Learned, s
1.5	1
3.0	2
4.5	3
6.0	4

31. Air Travel Use the table at the right. How long will the jet take to travel 5390 mi?

Passenger Jet Travel

Hours, h	1	2	3	4
Miles, m	490	980	1470	1960