8. **Multiple Representations** One roll of quarters contains 40 quarters. (Example 2)

   a. **Symbols** Write an equation that can be used to find the number of quarters q in any number of rolls of quarters r.

   b. **Table** Make a table to find the number of quarters in 3, 4, 5, and 6 rolls.

   c. **Graph** Graph the ordered pairs for the relation.

DOMAIN {1, 2, 3, 4, 5, 6}
RANGE {105, 120, 135, 150, 165, 180}

$\frac{30}{2} = \frac{15}{1}$

9. **Multiple Representations** Sales for a new video game offered by Technogames is shown at the right. (Example 2)

   a. **Table** Make a table showing the domain (month) and the range (video games sold).

   b. **Symbols** Write an equation that can be used to find the number of games sold g for any month m.

   c. **Numbers** State the domain and range of the relation.

x	y
1	180
2	165
3	150
4	135
5	120
6	105

2 → 30

10. **Multiple Representations** Kevin's Flooring sells different sizes of square floor tiles. Carl wants to purchase 10 tiles.

    a. **Symbols** Write an equation that can be used to find the area of any 10 square floor tiles. (*Hint:* area = side × side)

    b. **Table** Make a table to find the area covered by 10 tiles that measure 6, 12, 15, and 24 inches on one side.

    c. **Graph** Graph the ordered pairs for the relation.

$g = 180 - 15m$
$180 - 15(5) = 180 - 75 = 105$

11. **Multiple Representations** The table shows the temperatures at various depths in a lake.

    a. **Graph** Graph the ordered pairs on a coordinate plane.

    b. **Symbols** Can you write one equation that can be used to find the temperature t based on the depth in the lake d? Explain.

    c. **Analyze** State the domain and range of the relation.

Depth (ft)	Temperature (°F)
0	74
10	72
20	71
30	61
40	55
50	53

$g = 180 - 15(M + 1)$
$g = 180 - 15(5 - 1)$
$180 - 15(6)$
$180 - 60$
120

H.O.T. Problems Higher Order Thinking

12. **Model with Mathematics** Tickets to an amusement park are \$26 each. Write an equation to find the total cost c for t tickets. Graph four ordered pairs for the relation.

13. **Model with Mathematics** Write about a real-world situation that can be represented by the equation $y = 4x$.

14. **Identify Repeated Reasoning** Write a rule for the relation shown in the table.

x	1	2	3	4
y	10	12	14	16

15. **Building on the Essential Question** Give an example of a situation in which it is best to represent a relation by a table. Give an example of a situation in which it is best to represent a relation by an equation. Justify your choice in each case.

Standardized Test Practice

16. Short Response The table below follows a rule.

x	y
1	5
3	11
5	17
7	23
8	26
10	32

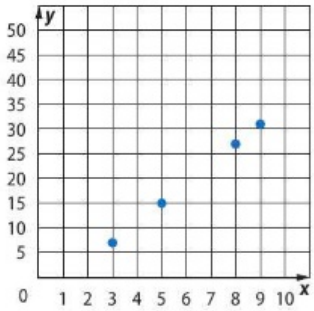
Write a rule for the relationship shown in the table.

17. Walik is buying CDs from an online store. Each CD costs $12.99. There is a flat shipping charge of $4.95. Which expression represents the cost of purchasing n CDs?

A $n(12.99 + 4.95)$ **C** $12.99n + 4.95$

B $4.95n + 12.99$ **D** $(12.99 - 4.95)n$

18. Which of the following equations would best describe the graph shown below?



F $y = 2x + 1$ **H** $y = 5x - 10$

G $y = 3x - 2$ **J** $y = 4x - 5$

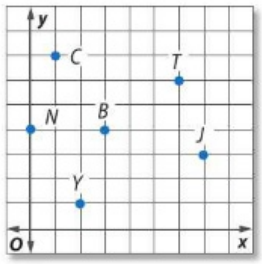
19. The relation that is represented by the equation $y = 20 - 2x$ has the domain {3, 4, 5, 6}. Which of the following sets is the range of the relation?

A {3, 4, 5, 6} **C** {12, 13, 14, 15}

B {8, 10, 12, 14} **D** {14, 16, 18, 20}

Common Core Review

Refer to the coordinate plane at the right. Write the ordered pair that names each point. 5.G.1



20. C **21.** J **22.** N

23. T **24.** Y **25.** B

Simplify each expression 7.EE.1

26. $(m + 8) + 4$ **27.** $(17 + p) + 9$ **28.** $21 + (k + 16)$

29. $(6 \cdot c) \cdot 8$ **30.** $8 \cdot (y \cdot 2)$ **31.** $3(25s)$

32. Financial Literacy There are 20 nickels in one dollar. 6.EE.2

a. Write an algebraic expression that can be used to find the number of nickels in any number of dollars n.

b. How many nickels are in $7.00?

Find each quotient. 6.NS.2

33. $84 \div 12$ **34.** $135 \div 15$ **35.** $792 \div 24$ **36.** $1938 \div 19$

37. $1904 \div 112$ **38.** $5040 \div 80$ **39.** $11{,}045 \div 47$ **40.** $36{,}192 \div 104$

Evaluate each expression if $a = 3$, $b = 8$, and $c = 2$. 7.NS.3

41. $\frac{ab}{2}$ **42.** $5a - (b + c)$ **43.** $2a - c + b$ **44.** $23 - \frac{5b}{2}$

19. The relation that is represented by the equation $y = 20 - 2x$ has the domain {3, 4, 5, 6}. Which of the following sets is the range of the relation?

A {3, 4, 5, 6}
C {12, 13, 14, 15}
B {8, 10, 12, 14}
D {14, 16, 18, 20}

DOMAIN ARE THE X VALUES

X, Y
(3, 5)
RANGE

DOMAIN RANGE

X	Y
X	20 - 2X
3	14 → 20 - 2(3) = 20 - 6 = 14
4	12 → 20 - 2(4) = 20 - 8 = 12
5	10
6	8