Practice Test 6

Chapter 6 Practice Test

For #1 to #3, select the best answer.

Use the pattern below to answer #1 and #2.

1. Which table of values best represents the pattern?

A

Figure Number (f)	1	2	3	4
Number of Sides (s)	18	36	54	72

B

Figure Number (f)	1	2	3	4
Number of Sides (s)	18	28	38	48

C

Figure Number (f)	1	2	3	4
Number of Sides (s)	12	20	28	36

D

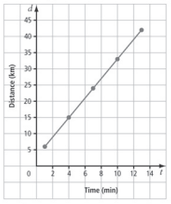
Figure Number (f)	1	2	3	4
Number of Sides (s)	12	24	36	48

2. Which equation represents the pattern?

A $s = 12f$ **B** $s = 8f + 4$

C $s = 10f + 8$ **D** $s = 18f$

3. Which equation represents this graph?

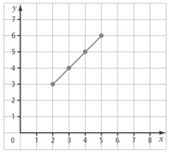


A $d = 2t + 4$ **B** $d = 4t - 1$

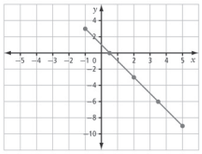
C $d = 3t + 3$ **D** $d = t + 5$

Complete the statements in #4 and #5.

4. When $x = 1.5$ on the graph, the approximate y-coordinate is ■.



5. When $y = -8$ on the graph, the approximate x-coordinate is ■.



Short Answer

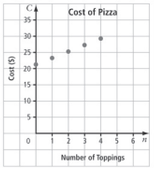
6. A number pattern starts with the number -2. Each number is 4 less than the previous number.

a) Make a table of values for the first five numbers in the pattern.

b) What equation can be used to determine each number in the pattern? Verify your answer.

c) What is the value of the 11th number in the pattern?

7. A cheese party pizza costs $21.25. The graph shows the cost of adding additional toppings.



a) What is the approximate cost of a party pizza with five toppings?

b) Is it reasonable to interpolate values on this graph? Explain.

8. Create a table of values and a graph for each equation.

a) $y = -2x + 6$ **b)** $y = 2x - 6$

c) $y = 6$

9. How are the graphs in #8 similar? How are they different?

Extended Response

10. A cross-country ski park contains five different trails. The diagram shows the trails, with each trail being successively larger.

Each side length of the shortest trail is 2 km. The side length of each consecutive trail is 0.5 km longer than the previous one.

a) Construct a table of values to show the relationship between the trail number and the total distance of each trail.

b) What equation represents the relationship?

c) Graph the linear relation.

d) If a sixth trail were added, what would be its total distance?

Math Link: Wrap It Up!

You are planning a canoe trip with some friends. Where are you going? How long will your trip be? How many people are going?

You are in charge of ordering food supplies to meet the energy requirements of your group. For the trip, the amount of food energy required by a canoeist can be modelled by the equation $a = \frac{C}{100} - 17$, where a represents the person's age and C represents the number of calories.

Use the Internet, travel brochures, or other sources to find information about your trip.

a) Write a paragraph describing your trip.

b) Create a table of values for your data about total food energy requirements for the group.

c) Graph the linear relation.

d) Develop a problem based on your graph that also includes interpolation and extrapolation and provide a solution. Show your work.

***MathLinks 9*, pages 246–247**

Suggested Timing

40–50 minutes

Materials

- grid paper
- ruler

Blackline Masters

Master 8 Centimetre Grid Paper
Master 9 0.5 Centimetre Grid Paper
BLM 6–12 Chapter 6 Test

Planning Notes

Make copies of **Master 8 Centimetre Grid Paper** and **Master 9 0.5 Centimetre Grid Paper** available for students to draw graphs for #8 and 9. Have students start the practice test by writing the question numbers in their notebook. Have them indicate which questions they need a little help with, a lot of help with, or no help with. Have students first complete the questions they know they can do. Then, have them complete the questions they know something about. Finally, have students do their best on the questions that they think they will need extra coaching with.

This practice test can be assigned as an in-class or take-home assignment. Provide students with the number of questions they can comfortably do in one class. These are the minimum questions that will meet the related curriculum outcomes: #1–10.

Study Guide

Question(s)	Section(s)	Refer to	The student can …
#1, 2	6.1	Example 1	✓ represent pictorial, oral, and written patterns with linear equations ✓ solve problems that involve pictorial, oral, and written patterns using a linear equation
#3	6.1 6.3	Example 2 Example 1	✓ verify linear equations by substituting values ✓ match equations of linear relations with graphs
#4, 7	6.2	Example 2	✓ extend graphs to determine an unknown value ✓ estimate values beyond known values on a graph
#5	6.2	Example 1	✓ estimate values between known values on a graph
#6	6.1	Examples 1, 2	✓ represent pictorial, oral, and written patterns with linear equations ✓ solve problems that involve pictorial, oral, and written patterns using a linear equation ✓ verify linear equations by substituting values
#8, 9	6.3	Examples 1, 3	✓ graph linear equations ✓ solve problems by graphing a linear relation and analysing the graph
#10a), b), d) #10c)	6.1 6.3	Examples 1, 2 Example 1	✓ represent pictorial, oral, and written patterns with linear equations ✓ solve problems that involve pictorial, oral, and written patterns using a linear equation ✓ graph linear equations

Answers

Chapter 6 Practice Test

1. C **2.** B **3.** C **4.** 2.5 **5.** 4.5

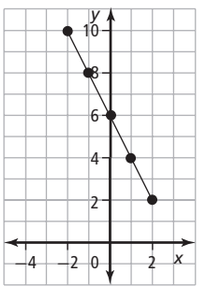
6. a)

Term, n	Value, v
1	–2
2	–6
3	–10
4	–14
5	–18

b) $v = -4n + 2$; Example: $-14 = -4(4) + 2$ **c)** –42

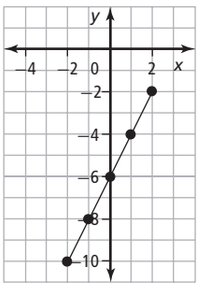
7. a) $32 **b)** No, because you cannot add part of a topping

8. a) Example:



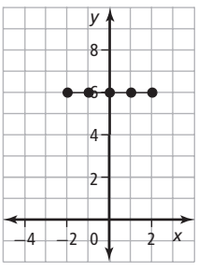
x	y
–2	10
–1	8
0	6
1	4
2	2

b) Example:



x	y
–2	–10
–1	–8
0	–6
1	–4
2	–2

c) Example:



x	y
–2	6
–1	6
0	6
1	6
2	6

9. Look for at least one similarity and one difference. Examples:
Similarities:
• For graphs a) and c), the value of y when $x = 0$ is the same.
Differences:
• The direction and slope of the lines are different for each graph.

Answers

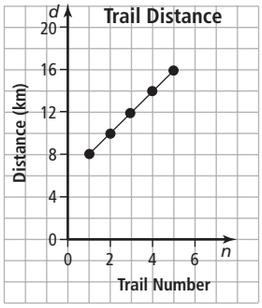
Chapter 6 Practice Test

10. a)

Trail Number, n	Distance, d (km)
1	8
2	10
3	12
4	14
5	16

b) $d = 2n + 6$

c)



d) 18 km

Assessment	Supporting Learning
Assessment *as* Learning	
Chapter 6 Self-Assessment Have students review their earlier responses in the What I Need to Work On section of their Foldable.	• Have students use their responses on the practice test and work they completed earlier in the chapter to identify areas in which they may need to reinforce their understanding of skills or concepts. Before the chapter test, coach them in the areas in which they are having difficulties.
Assessment *of* Learning	
Chapter 6 Test After students complete the practice test, you may wish to use **BLM 6–12 Chapter 6 Test** as a summative assessment.	• Consider allowing students to use their Foldable. • Since the Wrap It Up! and Challenges provide additional reinforcement of chapter content, you may wish to have students complete these activities before doing the Chapter 6 Practice Test and **BLM 6–12 Chapter 6 Test**. • Consider using the Challenges to assess the knowledge and skills of students who have difficulty with tests.