

Unit 1 Test Review

Algebra 1

Write a verbal expression for each algebraic expression.

(Lesson 1-1)

1. $21 - x^3$ 2. $3m^5 + 9$

Write an algebraic expression for each verbal expression.

(Lesson 1-1)

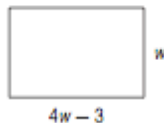
3. five more than s squared
 4. four times y to the fourth power
 5. **CAR RENTAL** The XYZ Car Rental Agency charges a flat rate of \$29 per day plus \$0.32 per mile driven. Write an algebraic expression for the rental cost of a car for x days that is driven y miles. (Lesson 1-1)

Evaluate each expression. (Lesson 1-2)

6. $24 \div 3 - 2 \cdot 3$
 7. $5 + 2^2$
 8. $4(3 + 9)$
 9. $36 - 2(1 + 3)^2$
 10. $\frac{40 - 2^3}{4 + 3(2^2)}$
 11. **AMUSEMENT PARK** The costs of tickets to a local amusement park are shown. Write and evaluate an expression to find the total cost for 5 adults and 8 children. (Lesson 1-2)



12. **MULTIPLE CHOICE** Write an algebraic expression to represent the perimeter of the rectangle shown below. Then evaluate it to find the perimeter when $w = 8$ cm. (Lesson 1-2)



- A 37 cm C 74 cm
 B 232 cm D 45 cm

Evaluate each expression. Name the property used in each step. (Lesson 1-3)

13. $(8 - 2^3) + 21$
 14. $3(1 \div 3) \cdot 9$
 15. $[5 \div (3 \cdot 1)] \frac{3}{5}$
 16. $18 + 35 + 32 + 15$
 17. $0.25 \cdot 7 \cdot 4$

Use the Distributive Property to rewrite each expression. Then evaluate. (Lesson 1-4)

18. $3(5 + 2)$
 19. $(9 - 6)12$
 20. $8(7 - 4)$

Use the Distributive Property to rewrite each expression. Then simplify. (Lesson 1-4)

21. $4(x + 3)$
 22. $(6 - 2y)7$
 23. $-5(3m - 2)$

24. **DVD SALES** A video store chain has three locations. Use the information in the table below to write and evaluate an expression to estimate the total number of DVDs sold over a 4-day period. (Lesson 1-4)

Location	Daily Sales Numbers
Location 1	145
Location 2	211
Location 3	184

25. **MULTIPLE CHOICE** Rewrite the expression $(8 - 3p)(-2)$ using the Distributive Property. (Lesson 1-4)
- F $16 - 6p$
 G $-10p$
 H $-16 + 6p$
 J $10p$

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ERROR ANALYSIS Tom and Li-Cheng are solving the equation $x = 4(3 - 2) + 6 \div 8$. Is either of them correct? Explain your reasoning.

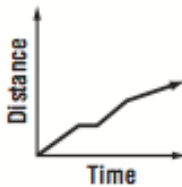
Tom	Li-Cheng
$x = 4(3 - 2) + 6 \div 8$	$x = 4(3 - 2) + 6 \div 8$
$= 4(1) + 6 \div 8$	$= 4(1) + 6 \div 8$
$= 4 + 6 \div 8$	$= 4 + 6 \div 8$
$= 4 + \frac{6}{8}$	$= 10 \div 8$
$= 4\frac{3}{4}$	$= \frac{5}{4}$

CHALLENGE Find all of the solutions of $x^2 + 5 = 30$.

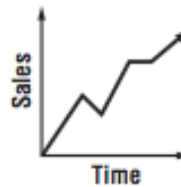
OPEN ENDED Write an equation that involves two or more operations with a solution of -7 .

Describe what is happening in each graph.

7. The graph represents the distance the track team runs during a practice.



8. The graph represents revenues generated through an online store.



Express each relation as a table, a graph, and a mapping. Then determine the domain and range.

9. $\{(0, 0), (-3, 2), (6, 4), (-1, 1)\}$

10. $\{(5, 2), (5, 6), (3, -2), (0, -2)\}$

11. $\{(6, 1), (4, -3), (3, 2), (-1, -3)\}$

12. $\{(-1, 3), (3, -6), (-1, -8), (-3, -7)\}$

13. $\{(6, 7), (3, -2), (8, 8), (-6, 2), (2, -6)\}$

14. $\{(4, -3), (1, 3), (7, -2), (2, -2), (1, 5)\}$

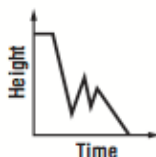
Identify the independent and dependent variables for each relation.

15. The Spanish classes are having a fiesta lunch. Each student that attends is to bring a Spanish side dish or dessert. The more students that attend, the more food there will be.

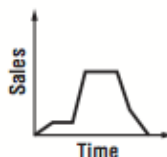
16. The faster you drive your car, the longer it will take to come to a complete stop.

Describe what is happening in each graph.

17. The graph represents the height of a bungee jumper.



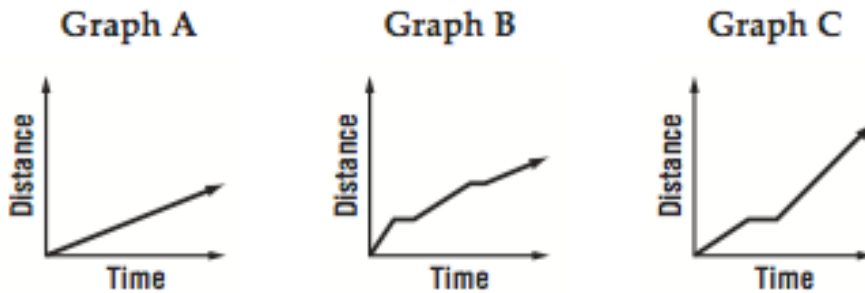
18. The graph represents the sales of lawn mowers.



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SPORTS In a triathlon, athletes swim 2.4 miles, bicycle 112 miles, and run 26.2 miles. Their total time includes transition time from one activity to the next. Which graph best represents a participant in a triathlon? Explain.



If $f(x) = -2x - 3$ and $g(x) = x^2 + 5x$, find each value.

33. $f(-1)$

34. $f(6)$

35. $g(2)$

36. $g(-3)$

37. $g(-2) + 2$

38. $f(0) - 7$

39. $f(4y)$

40. $g(-6m)$

41. $f(c - 5)$

42. $f(r + 2)$

43. $5[f(d)]$

44. $3[g(n)]$

BABYSITTING Christina earns \$7.50 an hour babysitting.

- Write an algebraic expression to represent the money Christina will earn if she works h hours.
- Choose five values for the number of hours Christina can babysit. Create a table with h and the amount of money she will make during that time.
- Use the values in your table to create a graph.
- Does it make sense to connect the points in your graph with a line? Why or why not?