

# Algebra I Summer Assessment – Unit 1

Community

Personalization

Progress

Purpose

Name: \_\_\_\_\_

## Unit 1 Summer Summative Assessment Answer Sheet

### 1.1 Evaluate Expressions

5. \_\_\_\_\_
26. \_\_\_\_\_
27. \_\_\_\_\_
28. \_\_\_\_\_
29. \_\_\_\_\_

### 1.2 Apply Order of Operations

4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
13. \_\_\_\_\_
24. \_\_\_\_\_

### 1.3 Write Expressions

9. \_\_\_\_\_
11. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
17. \_\_\_\_\_

### 1.4 Write Equations and Inequalities

5. \_\_\_\_\_

6. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
23. \_\_\_\_\_

### 1.5 use a Problem Solving Plan

5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_

### 1.6 Represent Functions as Rules

9. See Worksheet for answer
10. See Worksheet for answer
11. See Worksheet for answer
13. See Worksheet for answer
14. See Worksheet for answer

### 1.7 Represent Functions as Graphs

6. \_\_\_\_\_
7. \_\_\_\_\_
12. See Worksheet for graph
13. See Worksheet for graph
21. See Worksheet for graph

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Community

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## 1.1 Evaluate Expressions

### Evaluate the expression.

5.  $y + 7$  when  $y = 5$

### Evaluate the expression.

26.  $x^2$  when  $x = 5$

27.  $y^3$  when  $y = 3$

28.  $m^8$  when  $m = 1$

29. **Window Treatments** You are ordering custom blinds for your bedroom windows. The ordering instructions are to measure the width of the window in inches and add a half-inch to this measurement. So, the blind width you order is given by the expression  $w + 0.5$  where  $w$  is the width of your window.
- One of your windows measures 27 inches wide. What width blind should you order?
  - The other window measures 28.5 inches wide. What width blind should you order?

# Algebra I Summer Assessment – Unit 1

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Community

Personalization

Progress

Purpose

1.2 Apply Order of Operations

4.  $18 \div 6 + 4 \cdot 3$

5.  $13 - 15 \div 5 + 9$

6.  $\frac{2}{3} \cdot 3^2 - 5$

**Evaluate the expression.**

13.  $3x^4 - 5$  when  $x = 5$

24. **Painting** Three weeks ago, an art supply store started selling a paint kit for 75% of the original price. Now the kit is 15% off of the sale price. The expression  $0.75x - 0.15(0.75x)$  represents the current price of the paint kit where  $x$  is the kit's original price (in dollars). Find the current price of the kit if it originally cost \$48.

# Algebra I Summer Assessment – Unit 1

Community

Personalization

Progress

Purpose

## 1.3 Write Expressions

### Write an expression for the situation.

9. The height of a wall that is  $b$  bricks tall if each brick is 3 inches tall
11. The total number of lawns you will mow today if you've already mowed 4 lawns and will mow  $w$  more lawns

### Find the unit rate.

13.  $\frac{40 \text{ flowers}}{5 \text{ vases}}$

14.  $\frac{6 \text{ cups}}{3 \text{ servings}}$

17. **Bowling** In bowling, scoring is done by frame, with a frame consisting of two attempts to knock down all the pins. A spare occurs when it takes both attempts to knock down all 10 pins. The score for a spare in the current frame is found by adding the number of pins knocked down in the first attempt of the next frame to 10, the number of pins knocked down in the spare in the current frame.
- a. Write an expression for the score of the spare if you knock down  $p$  pins in the first attempt of the next frame.
- b. What is your score for a spare if you knock down 7 pins in the first attempt of the next frame?

# Algebra I Summer Assessment – Unit 1

---

Community

Personalization

Progress

Purpose

1.4 Write Equations and Inequalities

## Write an equation or an inequality.

5. The sum of 8 and a number  $n$  is equal to 15.
6. The product of 5 and a number  $y$  is at least 22.

## Check whether the given number is a solution of the equation or inequality.

9.  $x + 14 = 19$ ; 5

10.  $2m + 3 = 11$ ; 3

23. **Die-Cast Cars** You buy a storage case that holds 150 collectible die-cast cars. You have 132 die-cast cars. Write an inequality that describes how many more cars you can buy and still have no more cars than the case will hold. You buy 24 cars. Will they all fit in the case?

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Community

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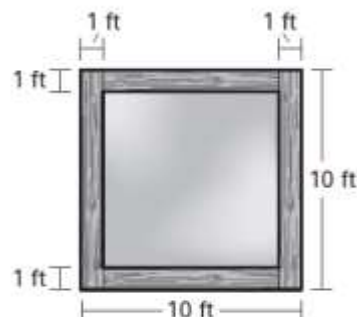
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## 1.5 Use a Problem Solving Plan

5. You are traveling 150 miles to your cousin's house. You travel at a rate of 50 miles per hour. When will you get to your cousin's house?
6. **Stamp Collection** Your stamp collection consists of 120 stamps. Each stamp has either a cancellation mark or no cancellation mark. There are 75 more stamps with cancellation marks than stamps without cancellation marks. Let  $x$  be the number of stamps without cancellation marks. Which equation correctly models this situation?
- A.  $x + 75 = 120$   
B.  $x + (x + 75) = 120$   
C.  $x + (x - 75) = 120$
7. **Picnic** You are responsible for buying the hamburger rolls for an upcoming picnic. Each bag of rolls costs \$1.30 and contains 8 rolls. You need to buy a total of 64 rolls. How much money will it cost for the rolls?
8. **Temperature** Yesterday's high and low temperatures were  $50^{\circ}\text{F}$  and  $41^{\circ}\text{F}$ , respectively. What are these temperatures in degrees Celsius?

9. **Sandbox** A civic group is building a sandbox that is enclosed by 1-foot wide railroad ties. The group needs to find the area inside the sandbox to find the amount of sand needed. Use the figure and the formula for area to write an equation that you can use to find the area inside the sandbox.



# Algebra I Summer Assessment – Unit 1

Community

Personalization

Progress

Purpose

1.6 Represent Functions as Rules

**Make a table for the function. Identify the range of the function.**

**9.**  $y = 4x$

Domain: 0, 1, 2, 3

**10.**  $y = x + 2$

Domain: 11, 15, 22, 27

**11.**  $y = x - 3$

Domain: 5, 9, 14, 19

- 13. Centerpieces** A florist is making centerpieces for a charity event. She is using 9 flowers in each centerpiece. Write a rule for the total number of flowers used as a function of the number of centerpieces created.

- 14. Kickboxing** You join a kickboxing class at a local gym. The cost is \$5 per class plus \$25 for the initial membership fee. Write a rule for the total cost of the class in dollars as a function of the number of classes you attend. How much will it cost if you go to 8 classes?

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Community

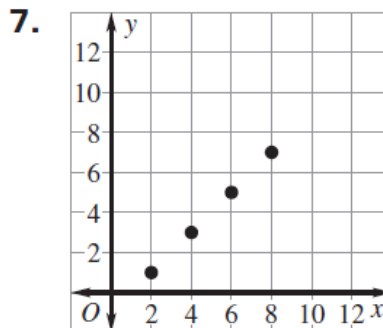
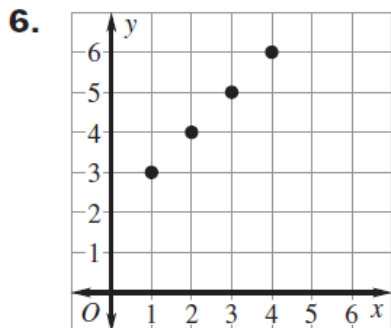
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## 1.7 Represent Functions as Graphs

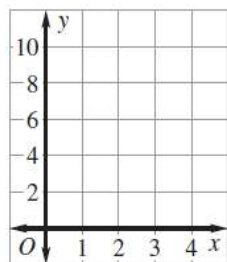
**Identify the ordered pairs in the graph. Then identify the domain and range.**



**Graph the function.**

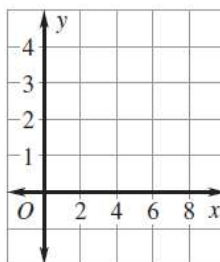
**12.**  $y = x + 5$

Domain: 0, 1, 2, 3



**13.**  $y = x - 3$

Domain: 6, 5, 4, 3



**21. Hourly Pay** The table shows the pay  $d$  (in dollars) as a function of the number of hours worked  $h$ . Graph the function.

<b>Hours worked, <math>h</math></b>	1	2	3	5	8
<b>Pay (dollars), <math>d</math></b>	6.75	13.50	20.25	33.75	54

