

# READY TO GO ON?

## Honors Algebra 2 Summer Assignment Quiz for Lessons 1-1 Through 1-5

### 1-1 Sets of Numbers

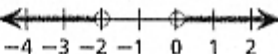
Order the given numbers from least to greatest. Then classify each number by the subsets of the real numbers to which it belongs.

1.  $2.5, -3\frac{1}{3}, \sqrt{5}, -\frac{4}{5}, 0.\overline{75}$

2.  $\sqrt{3}, -\frac{\pi}{2}, \frac{5}{6}, -1.\overline{15}, -2$

Rewrite each set in the indicated notation.

3.  $\{x \mid -4 \leq x < 2\}$ ; interval notation

4.  set-builder notation

### 1-2 Properties of Real Numbers

Identify the property demonstrated by each equation.

5.  $3(2a + b) = 3(2a) + 3b$

6.  $21 + 0 = 21$

7.  $(2\pi)r = 2(\pi r)$

8. Use mental math to find the amount of a 12% shipping fee for an item that costs \$250. Explain your steps.

### 1-3 Square Roots

9. A rental company rents portable dance floors in three different sizes: 75 square feet, 125 square feet, and 150 square feet. Estimate the dimensions of each square dance floor to the nearest tenth of a foot. Then identify which of the three sizes is the largest dance floor that would fit in a room 11 feet wide and 13 feet long.

Simplify each expression.

10.  $-\sqrt{72}$

11.  $5\sqrt{12} + 9\sqrt{3}$

12.  $\frac{-4\sqrt{10}}{\sqrt{2}}$

13.  $\sqrt{32} \cdot \sqrt{6}$

### 1-4 Simplifying Algebraic Expressions

Evaluate each expression for the given values of the variables.

14.  $\frac{a^2}{3} + \frac{ab}{4}$  for  $a = 3$  and  $b = -4$

15.  $\frac{d^2}{2cd}$  for  $c = -1$  and  $d = 2$

Simplify each expression.

16.  $2x^2 - 3y + 5x^2 - x^2$

17.  $3(x + 2y) - 5x + y$

### 1-5 Properties of Exponents

Simplify each expression. Assume all variables are nonzero.

18.  $(x^{11}y^{-2})^4$

19.  $\frac{-3s^3t^2}{s^{-2}t^6}$

20.  $4(a^2b^6)^{-3}$

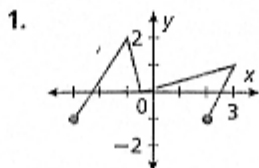
21.  $\left(\frac{m^4}{-5m^{-2}n^3}\right)^2$

22. The atomic mass of an element from the periodic table is the mass, in grams, of one mole, or  $6.02 \times 10^{23}$  atoms. Suppose a sample of oxygen contains  $4.515 \times 10^{26}$  atoms. How many moles of oxygen atoms are in the sample?

## Quiz for Lessons 1-6 Through 1-9

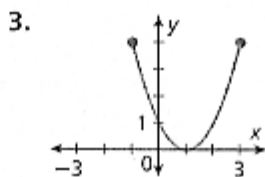
### 1-6 Relations and Functions

Give the domain and range for each relation. Then tell whether the relation is a function.



2. 

x	0	2	4	6	2
y	5	8	10	20	12



### 1-7 Function Notation

For each function, evaluate  $f(0)$ ,  $f(1)$ , and  $f(-2)$ .

4.  $f(x) = 12 - 3x$

5.  $f(x) = 3x^3 + 1$

6.  $f(x) = 4 - x^2$

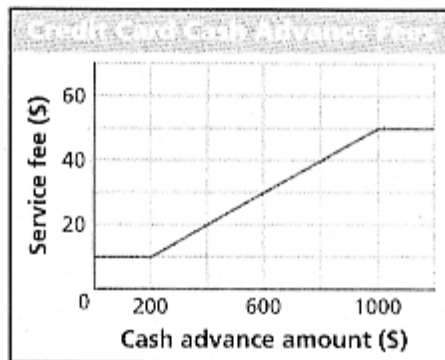
7. In a certain city, taxi fares are regulated at \$1.75 per ride plus \$0.25 for each  $\frac{1}{4}$  mile.

- Write a function to represent the taxi fare per mile.
- Graph your function.
- What is the value of the function for an input of 5.5, and what does it represent?

### 1-8 Exploring Transformations

The graph shows some credit card fees for cash advances. Sketch a graph to represent each situation and identify the transformation of the original graph that it represents.

- Each fee is increased by \$15.
- Each fee is decreased by 40%.



### 1-9 Introduction to Parent Functions

Identify the parent function for  $g$  from its equation. Then graph  $g$  on your calculator and describe what transformation of the parent function it represents.

10.  $g(x) = -x^2$

11.  $g(x) = \sqrt{x-3}$

12.  $g(x) = 1.5x$

13. The table lists the maximum load of a three-strand nylon rope based on its diameter. Graph the relationship from diameter to maximum load and identify which parent function best describes the data. Then use your graph to estimate the diameter of a three-strand nylon rope that has a maximum load of 7920 kilograms.

Nylon Rope Maximum Load					
Diameter (mm)	8	10	12	14	16
Maximum Load (kg)	1920	2720	3750	5100	6640