

Algebra 1 Test6 Review  
Exponents/Radicals

Name \_\_\_\_\_

Date \_\_\_\_\_

1     **Evaluate**  
       $-x^2 - 7x$  when  $x = -2$

11    If a satellite travels 62,000,000 miles from Earth, how can we write it in scientific notation?

#2-10, **Simplify** each of the following.

2      $2m^2 \cdot m^3 \cdot m$

12    The wave length of yellow light is 0.000065. Express this using scientific notation.

3      $(m^2n^4)(m^3n)$

4      $(5ab^3)^2$

13    If a computer can perform  $4.66 \times 10^8$  calculations per second, what is the performance of the computer in one minute?

5      $(-2x^4)^3$

6      $(x^2y^3)^4(x^3y)$

14    Light travels at approximately 300,000,000 m/sec. If this is expressed in scientific notation it would look like:  
 $3.0 \times 10^?$

7      $\frac{r^5st^3}{r^2st^6}$

15    Suppose there are  $5 \times 10^6$  bacteria in every 2 liters of water. How many bacteria are there in 6 liters of water?

8      $\frac{-20a^2b^4}{-5a^2b}$

9      $\frac{a^5b^2c^3}{(ab)^{-4}}$

16    If you had  $3.5 \times 10^9$  dollars and you divided your fortune with  $2 \times 10^3$  people, how much would each person get?

10     $\left(\frac{cd^3}{c^5}\right)^2$

17 The half-life of Uranium234 is  $2.5 \times 10^5$  years and the half-life of Plutonium is  $8.0 \times 10^7$  years. How many times greater is the half-life of Plutonium than Uranium234?

18 The bedroom of our house is 1,200 cubic meters. There are  $3.4 \times 10^9$  particles of dust per cubic meter. Write how many particles of dust are present in the bedroom of our house.

19 **Evaluate**  $\sqrt{20}$   
Round your answer to the nearest hundredth. Plot this value on the number line provided.



20 **Simplify**  $\sqrt{20}$  Leave your answer in simplest radical form.

21 Between which two whole number is  $\sqrt{11} \cdot \sqrt{3}$ ?

- A Between 3 and 4
- B Between 4 and 5
- C Between 5 and 6
- D Between 6 and 7

22 If  $x = \sqrt{27}$ , which is the value of  $x$ ?

- A  $3\sqrt{3}$
- B  $9\sqrt{3}$
- C  $3\sqrt{9}$
- D  $6\sqrt{3}$

#23-26, Simplify and leave your answers in simplest radical form.

23  $\sqrt{28t^2}$

- A  $4t\sqrt{7}$
- B  $2t^2\sqrt{7}$
- C  $2t\sqrt{7}$
- D  $7t\sqrt{2}$

24  $\sqrt{72x^2y}$

- A  $6x^2\sqrt{2y}$
- B  $6x\sqrt{2y}$
- C  $3x\sqrt{8y}$
- D  $3x^2\sqrt{8y}$

25  $\sqrt[3]{8m^5n}$

- A  $2mn\sqrt[3]{m^2}$
- B  $2m\sqrt[3]{2m^2n}$
- C  $2m^2\sqrt[3]{m^2n}$
- D  $2m\sqrt[3]{m^2n}$

26  $\sqrt[3]{27a^6b^9}$

#27-28, **Evaluate** the following expressions

27  $-\sqrt[3]{x} + y^2$  when  $x = 8$  and  $y = -3$

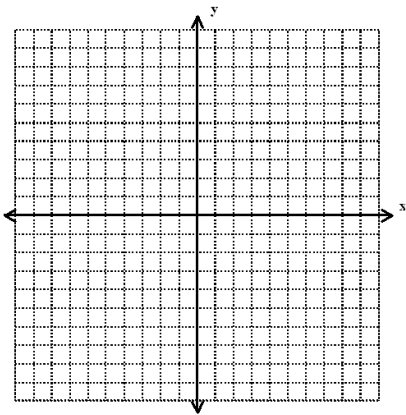
28  $5y - \sqrt{y^2 + z}$  when  $y = 9$  and  $z = 19$

Cumulative Review

29 Given the following system of equations:

$$\begin{cases} 2x + y = 5 \\ y = 2x + 1 \end{cases}$$

a.) Graph the system of equations above.



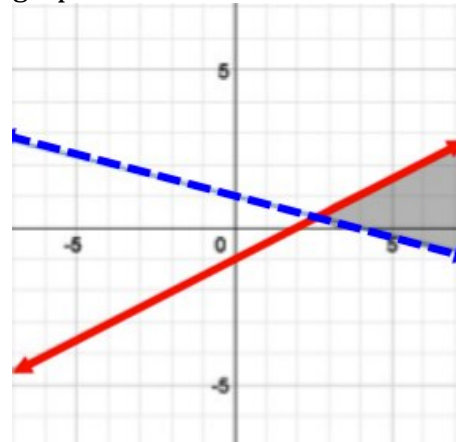
b.) What is the  $x$  value of the solution to this system?

c.) What is the  $y$  value of the solution to this system?

d.) What is the ordered pair for the solution to this system?

30 What is the solution to:  
 $4(m - 2) = 5(m - 3)$

31 Identify the system of inequalities graphed below.



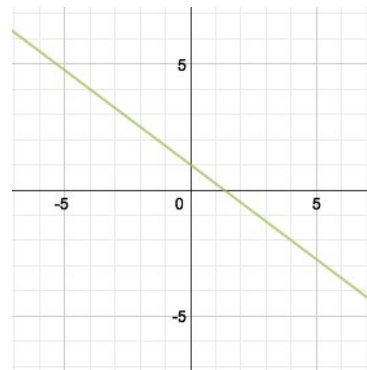
A  $\begin{cases} 2y \leq x - 2 \\ 4y < -x + 4 \end{cases}$

B  $\begin{cases} 2y \geq x - 2 \\ 4y > -x + 4 \end{cases}$

C  $\begin{cases} 2y \leq x - 2 \\ 4y > -x + 4 \end{cases}$

D  $\begin{cases} 2y \geq x - 2 \\ 4y < -x + 4 \end{cases}$

32 Find the slope of the line graphed below.



- A 3
- B -4
- C  $-4/3$
- D  $-3/4$