Chapter 1 Test 1 Study Guide

For multiple choice questions, circle the answer choice that best completes the statement or answers the question. For short answer or open-ended questions, provide the answer next to or below the problem. SHOW ALL WORK!!!

Evaluate the expression.

1) $(-2)^5 - (-2)^4$
   A) -48
   B) -16
   C) 16
   D) 48

2) Evaluate $a^2 - b^3$ if $a = 4$ and $b = -3$.

Evaluate the expression.

3) $(x^5 - y^2)^2 + x^3$, if $x = 2$ and $y = 8$
   A) 42
   B) $1,024$
   C) $1,032$
   D) $4,112$

4) $f - g^4$, if $f = 3$ and $g = -5$
   A) -622
   B) -86
   C) 23
   D) 622

5) Find the missing exponent in the equation $3y^5 \cdot y^? = 3y^{10}$.

6) Simplify $\dfrac{5^5 \cdot 6^3 \cdot 8^{10}}{5^3 \cdot 6 \cdot 8^9}$.
   A) 200
   B) 288
   C) 900
   D) $7,200$

Chapter 1 Test 1 Study Guide

Simplify. Express using exponents.

7) $\dfrac{36f^3g^8}{9f^3g}$

8) $(10t^4v^5)(3t^2v^5)$
   A) t^6v^{10}
   B) $30t^2v$
   C) $30t^6v^{10}$
   D) $30t^8v^{25}$

9) $(-3l^2w^3)(2lw^4)$
   A) $6l^3w^7$
   B) $-6l^2w^7$
   C) $-6l^3w^7$
   D) $-6l^2w^{12}$

10) $(-4r^6s^{15})^4$
   A) $256r^{24}s^{60}$
   B) $256r^{10}s^{19}$
   C) $-4r^{24}s^{60}$
   D) $-256r^{24}s^{60}$

Simplify using the Laws of Exponents. Write each expression using a positive exponent.

11) $\dfrac{n^7}{n^3}$

12) $-4x^2y(-3xy^3)$

13) $[(u^3)^2]^4$

14) $\dfrac{42c^4}{-6c^{12}}$

Write the fraction as an expression using a negative exponent.

15) $\dfrac{1}{2^9}$
   A) 2^{-9}
   B) $\dfrac{1}{2^{-9}}$
   C) $\dfrac{1}{-2^9}$
   D) -2^9

Chapter 1 Test 1 Study Guide

16) Write 7^{-5} using a positive exponent.

Evaluate the expression.

17) $(-6)^{-5}$

   A) $7,776$

   B) $\dfrac{1}{7,776}$

   C) $-\dfrac{1}{7,776}$

   D) $-\dfrac{1}{30}$

Simplify. Express using positive exponents.

18) $n^{-2} \cdot n^{-3}$

   A) $\dfrac{1}{n^5}$

   B) n

   C) n^5

   D) n^6

19) $\dfrac{w^3}{w^{-1}}$

   A) w^2

   B) w^4

   C) w^{-3}

   D) $\dfrac{1}{w^3}$

20) $\dfrac{k^{-4}}{k^{-6}}$

   A) k^2

   B) k^{24}

   C) $\dfrac{1}{k^2}$

   D) $\dfrac{1}{k^{10}}$

21) **ROADS** A state highway that is 4^4 miles long runs parallel to a smaller country road that is 4^2 miles long. How many times longer than the country road is the state highway? Write the answer as a number with a positive exponent.

   A) $\dfrac{1}{4^2}$

   B) 4

   C) 4^2

   D) 4^6

Chapter 1 Test 1 Study Guide

22) **FUNDRAISER** The hospital spent 9^5 dollars on new medical equipment this year. Last year, they spent 9^7 dollars. How many times more money did they spend last year than this year?

    A) $\dfrac{1}{9^2}$

    B) 9^2

    C) 9^{12}

    D) 9^{35}

23) **MEASUREMENT** In the Metric System, you would need to have $(10^4)^2$ grams to equal 1 metric ton. Simplify this measurement by multiplying the exponents, then simplify by finding the actual number of grams needed to equal 1 metric ton.

    A) 100

    B) 1,000,000

    C) 100,000,000

    D) 1,000,000,000

24) **CAR LOANS** After making a down payment, Mr. Valle will make 6^2 monthly payments of 6^3 dollars each to pay for his new car. What is the total of the monthly payments?

    A) $6

    B) $1,296

    C) $7,776

    D) $46,656

25) Marta is making a quilt in the shape of a square. The length of one edge of the quilt is $2g^2h^3$. What is the area of the quilt?

Chapter 1 Test 1 Study Guide

Answer Key

1) A

2) 43

3) C

4) A

5) 5

6) D

7) $4g^7$

8) C

9) C

10) A

11) n^4

12) $12x^3y^4$

13) u^{24}

14) $-\dfrac{7}{c^8}$

15) A

16) $\dfrac{1}{7^5}$

17) C

18) A

19) B

20) A

21) C

22) B

23) C

24) C

25) $4g^4h^6$