Name:_____ **Test 1 Review: Unit 1 & 2**

1. Select the correct symbol.

$\sqrt{84}$? $\frac{48}{5}$

- **A.** <
- **B.** =
- **C.** >

2. Order the following numbers from least to greatest.

$2.\bar{2}$, $\frac{11}{5}$, $\sqrt{7}$, 2.1

- **A.** $\frac{11}{5}$, 2.1 , $2.\bar{2}$, $\sqrt{7}$
- **B.** $\sqrt{7}$, $\frac{11}{5}$, 2.1 , $2.\bar{2}$
- **C.** 2.1 , $\frac{11}{5}$, $2.\bar{2}$, $\sqrt{7}$
- **D.** $\frac{11}{5}$, $\sqrt{7}$, 2.1 , $2.\bar{2}$

3. Select the correct symbol.

π ? $\frac{18}{5}$

- **A.** =
- **B.** <
- **C.** >

4. Simplify. $\sqrt{405}$

- **A.** 15
- **B.** $81\sqrt{5}$
- **C.** 135
- **D.** $9\sqrt{5}$

5. $3\sqrt{89x}$

Which value of x makes the expression above equivalent to $30\sqrt{89}$?

- **A.** 300
- **B.** 10
- **C.** 900
- **D.** 100

6. Simplify. $\sqrt{75}$

- **A.** $3\sqrt{5}$
- **B.** $15\sqrt{5}$
- **C.** $25\sqrt{3}$
- **D.** $5\sqrt{3}$

7. Look at the two monomials below.

$12u^3v^3w^3$ $20u^2vw^3$

What is the least common multiple (LCM) of the monomials shown above?

- **A.** $4u^5v^4w^6$
- **B.** $60u^3v^3w^3$
- **C.** $60u^5v^4w^6$
- **D.** $4u^2vw^3$

8. Look at the three monomials below.

$108x^3y^4z^4$ $60x^3y^3z$ $20x^2y^2z^3$

What is the least common multiple (LCM) of the monomials shown above?

- **A.** $540x^3y^4z^4$
- **B.** $12x^3y^3z$
- **C.** $12x^3y^3$
- **D.** $540x^6y^7z^5$

9. $\sqrt{43x}$

Which value of x makes the expression above equivalent to $15\sqrt{43}$?

- **A.** 15
- **B.** 225
- **C.** 30
- **D.** 645

10. $91x^2y \quad 14x^2y^2$

What is the greatest common factor (GCF) of the monomials shown above?

- **A.** $7x^2y^2$
- **B.** $7x^2y$
- **C.** $182x^2y^2$
- **D.** $182x^4y^3$

11. $21x^4y^2 \quad 77x^3y^4 \quad 7x^5y^5$

What is the greatest common factor (GCF) of the monomials shown above?

- **A.** $7x^5y^5$
- **B.** $231x^{12}y^{11}$
- **C.** $231x^5y^5$
- **D.** $7x^3y^2$

12. $6x^4yz^4 \quad 22xy^4$

What is the greatest common factor (GCF)

- **A.** $2xy$
- **B.** $2x^4y^4z^4$
- **C.** $66x^5y^5z^4$
- **D.** $66x^4y^4z^4$

13. Solve the following.

$\sqrt{32} \times 3\sqrt{2} = ?$

- **A.** 8
- **B.** 24
- **C.** 12
- **D.** $3\sqrt{34}$

14. Simplify: $4\sqrt{3} + 5\sqrt{12}$

- **A.** $\mathbf{9\sqrt{3}}$
- **B.** $\mathbf{14\sqrt{3}}$
- **C.** $\mathbf{1\sqrt{3}}$
- **D.** $\mathbf{13\sqrt{3}}$

15. Evaluate the following expression for $x = 37$.

$$3\sqrt{x-1} + 9$$

- **A.** 24
- **B.** 9
- **C.** 30
- **D.** 27

16. Which equations correctly shows $(x^2)^3 = x^6$?

- **A.** $(x^2)^3 = (x^2)(x^3) = x^6$
- **B.** $(x^2)^3 = (x^2)(x^2)(x^2) = x \cdot x \cdot x \cdot x \cdot x \cdot x = x^6$
- **C.** $(x^2)^3 = 3(2x) = 6x = x^6$
- **D.** $(x^2)^3 = 3x^2 = x^2 + x^2 + x^2 = x^6$

17. Evaluate the following expression when $n = 7$.

$$|n - 8| - |4 - n|$$

- **A.** -2
- **B.** 2
- **C.** 4
- **D.** -4

18. The greatest common factor (GCF) of x^3y^k and $x^{2k}y^4$ is x^3y^3. What is the value of k?

- A. 1
- B. 2
- C. 3
- D. 4

19. Simplify the following expression.

$$5^4 \cdot 10^4$$

- **A.** $10(20)$
- **B.** 50^4
- **C.** $5(10^4)$
- **D.** 50^8

20. Simplify. $\sqrt{32}$

- **A.** $4\sqrt{2}$
- **B.** $4\sqrt{8}$
- **C.** $16\sqrt{2}$
- **D.** 16

21. Which of the following inequalities is true for **all** real values of x?

A. $5\sqrt{x^2} \leq \frac{x}{4}$

B. $(4x)^3 \leq 5x^2$

C. $\sqrt{5x^2} \leq 5x^2$

D. $5(x^2 - 4) \leq 4(x^2 - 5)$

22. Four expressions are shown below.

$$5\sqrt{x} \quad 5x^2 \quad \frac{5}{2x} \quad \frac{x}{5}$$

Which inequality comparing two of the expressions is true when $0.2 \leq x \leq 0.6$?

- **A.** $\frac{x}{5} > 5x^2$
- **B.** $5\sqrt{x} > \frac{5}{2x}$
- **C.** $\frac{x}{5} > \frac{5}{2x}$
- **D.** $5\sqrt{x} > 5x^2$