

Test 1 (Unit 1 and Unit 2) version 3**Question 1 .**

Evaluate the following expression for $z = 101$.

$$6 + 6\sqrt{z - 1}$$

- ☐ A. 72
- ☐ B. 60
- ☐ C. 66
- ☐ D. 120

Question 2 .

Simplify.

$$\sqrt{98}$$

- ☐ A. $14\sqrt{7}$
- ☐ B. $7\sqrt{2}$
- ☐ C. $49\sqrt{2}$
- ☐ D. $2\sqrt{7}$

Question 3 .

Simplify.

$$\sqrt{200}$$

- ☐ A. $20\sqrt{10}$
- ☐ B. $10\sqrt{2}$
- ☐ C. $100\sqrt{2}$
- ☐ D. $2\sqrt{10}$

Question 4 .

Select the correct symbol.

$$\sqrt{10} \text{ ? } \frac{18}{5}$$

- ☐ A. $<$
- ☐ B. $>$
- ☐ C. $=$

Question 5 .

Simplify: $4\sqrt{6} + 3\sqrt{24}$

- ☐ A. $7\sqrt{6}$
- ☐ B. $14\sqrt{6}$
- ☐ C. $10\sqrt{6}$
- ☐ D. $20\sqrt{6}$

Question 6 .

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

- ☐ A. $\sqrt{4x^2} \leq 4x^2$
- ☐ B. $4(x^2 - 3) \leq 3(x^2 - 4)$
- ☐ C. $(3x)^3 \leq 4x^2$
- ☐ D. $4\sqrt{x^2} \leq \frac{4}{3}$

Question 7 .

An expression is shown below.

$$5\sqrt{33x}$$

Which value of x makes the expression equivalent to $15\sqrt{33}$?

- ☐ A. 3
- ☐ B. 9
- ☐ C. 45
- ☐ D. 225

Question 8 .

Four expressions are shown below.

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

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

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

Question 9 .

$$18x^2y \quad 30x^2y^4$$

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

- ☐ A. $6x^2y^4$
- ☐ B. $6x^2y$
- ☐ C. $90x^2y^4$
- ☐ D. $90x^4y^5$

Question 10 .

Which equation correctly shows that $(x^4)^3 = x^{12}$?

- ☐ A. $(x^4)^3 = 3(4x) = 12x = x^{12}$
- ☐ B. $(x^4)^3 = (x^4)(x^4)(x^4) = x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x = x^{12}$
- ☐ C. $(x^4)^3 = (x^4)(x^3) = x^{12}$
- ☐ D. $(x^4)^3 = 3x^4 = x^4 + x^4 + x^4 = x^{12}$

Question 11 .

Look at the three monomials below.

$$18x^2y^2z^3 \quad 30x^2y^4z \quad 10xy^3z^2$$

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

- ☐ A. $90x^2y^4z^3$
- ☐ B. $6x^2y^2z$
- ☐ C. $90x^4y^6z^4$
- ☐ D. $6x^2y^2$

Question 12 .

Solve the following.

$$\sqrt{12} \times 5\sqrt{3} = ?$$

- ☐ A. 9
- ☐ B. 30
- ☐ C. $5\sqrt{15}$
- ☐ D. 6

Question 13 .The greatest common factor (GCF) of $x^{4k}y^3$ and x^5y^k is x^5y^2 . What is the value of k ?

- ☐ A. 1
- ☐ B. 2
- ☐ C. 6
- ☐ D. 20

Question 14 .

$$18xy \quad 66x^2y \quad 6x^2y^2$$

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

- ☐ A. $6xy$
- ☐ B. $6x^2y^2$
- ☐ C. $198x^2y^2$
- ☐ D. $198x^5y^4$

Question 15 .

Order the following list of numbers from least to greatest.

$$\frac{39}{5}, 7.\bar{8}, \frac{23}{3}, \sqrt{59}$$

☐ A. $\frac{23}{3}, \frac{39}{5}, 7.\bar{8}, \sqrt{59}$

☐ B. $7.\bar{8}, \frac{23}{3}, \sqrt{59}, \frac{39}{5}$

☐ C. $\frac{23}{3}, \sqrt{59}, \frac{39}{5}, 7.\bar{8}$

☐ D. $\sqrt{59}, \frac{39}{5}, \frac{23}{3}, 7.\bar{8}$

Question 16 .

Select the correct symbol.

$$\frac{\pi}{2} ? \frac{6}{5}$$

☐ A. $<$

☐ B. $=$

☐ C. $>$

Question 17 .

Simplify.

$$\sqrt{1,584}$$

☐ A. $144\sqrt{11}$

☐ B. $12\sqrt{11}$

☐ C. $264\sqrt{3}$

☐ D. $22\sqrt{3}$

Question 18 .

Simplify.

$$\sqrt{63}$$

- ☐ A. $9\sqrt{7}$
- ☐ B. $3\sqrt{7}$
- ☐ C. $7\sqrt{3}$
- ☐ D. $21\sqrt{3}$

Question 19 .

An expression is shown below.

$$\sqrt{91x}$$

For which value of x should the expression be further simplified?

- ☐ A. $x = 6$
- ☐ B. $x = 10$
- ☐ C. $x = 14$
- ☐ D. $x = 17$

Question 20 .

Two monomials are shown.

$$240s^3t^6$$

$$4,200s^4t^3$$

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

- ☐ A. $120st$
- ☐ B. $120s^3t^3$
- ☐ C. $8,400s^4t^6$
- ☐ D. $8,400s^7t^9$

Question 21 .

Simplify the following expression.

$$8^2 \cdot 11^2$$

- ☐ A. $8(11^2)$
- ☐ B. 88^2
- ☐ C. $11(16)$
- ☐ D. 88^4

Question 22 .

$$21xy^2z \quad 77x^4y^2z$$

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

- ☐ A. $7xy^2z$
- ☐ B. $7x^4y^2z$
- ☐ C. $231x^4y^2z$
- ☐ D. $231x^5y^4z^2$

Question 23 .

Evaluate the following expression when $n = 1$.

$$|n - 8| - |3 - n|$$

- ☐ A. 5
- ☐ B. -9
- ☐ C. 1
- ☐ D. -1

Answers

1. C
2. B
3. B
4. A
5. C
6. A
7. B
8. D
9. B
10. B
11. A
12. B
13. B
14. A
15. C
16. C
17. B
18. B
19. C
20. C
21. B
22. A
23. A