

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

Simplify:

$$\frac{-2x^3 - 8x^2 - 6x}{-2x^3 + 10x^2 + 12x}, x \neq -1, 0, 6$$

- ☐ A. $-\frac{4}{5}x^2 - \frac{1}{2}x$
- ☐ B. $x^3 - \frac{4}{5}x^2 - \frac{1}{2}x$
- ☐ C. $\frac{x+3}{x-6}$
- ☐ D. $\frac{x-3}{x+6}$

Question 2 .

Simplify the following expression.

$$\frac{x^2 + 7x + 10}{x + 5}$$

- ☐ A. $x + 2$
- ☐ B. $x^2 + 8x + 5$
- ☐ C. $x^2 + 14x + 15$
- ☐ D. $x + 5$

Question 3 .

Simplify the expression given below.

$$(5x^2 - 9x + 25) + (7x^3 - 12x^2 + 17x - 18)$$

- ☐ A. $-7x^3 - 7x^2 + 8x + 43$
- ☐ B. $7x^3 - 17x^2 + 26x + 7$
- ☐ C. $7x^3 - 7x^2 + 8x + 7$
- ☐ D. $7x^3 - 7x^2 + 26x + 43$

Question 4 .

Which binomial is a factor of $x^2 + 7x + 10$?

- ☐ A. $(x + 1)$
- ☐ B. $(x + 5)$
- ☐ C. $(x - 2)$
- ☐ D. $(x + 10)$

Question 5 .

Order the following numbers from least to greatest.

$$3.\bar{2}, \frac{16}{5}, \sqrt{12}, 3.1$$

- ☐ A. $\frac{16}{5}, 3.1, 3.\bar{2}, \sqrt{12}$
- ☐ B. $3.1, \frac{16}{5}, 3.\bar{2}, \sqrt{12}$
- ☐ C. $\frac{16}{5}, \sqrt{12}, 3.1, 3.\bar{2}$
- ☐ D. $\sqrt{12}, \frac{16}{5}, 3.1, 3.\bar{2}$

Question 6 .

Simplify the following expression.

$$\frac{3x^9 - 24x^{17}}{x^5 - 8x^{13}}$$

- ☐ A. $-3x^8$
- ☐ B. $6x^4$
- ☐ C. $3x^4$
- ☐ D. $3x^9$

Question 7 .

Factor the polynomial below.

$$x^2 + 7x + 6$$

- ☐ A. $(x - 1)(x - 6)$
- ☐ B. $(x + 1)(x + 6)$
- ☐ C. $(x - 1)(x + 6)$
- ☐ D. $(x + 1)(x - 6)$

Question 8 .

Simplify the following expression.

$$\frac{2x^2 - 200}{x^2 + 20x + 100}$$

- ☐ A. $\frac{x + 10}{2x - 20}$
- ☐ B. $\frac{2x - 20}{x + 10}$
- ☐ C. $\frac{2x - 20}{2x + 10}$
- ☐ D. $\frac{2x + 10}{2x - 20}$

Question 9 .

Simplify the following expression.

$$(3x - 8)(3x + 8)$$

- ☐ A. $9x^2 - 16$
- ☐ B. $9x^2 + 48x - 64$
- ☐ C. $9x^2 - 48x - 64$
- ☐ D. $9x^2 - 64$

Question 10 .

Factor the following polynomial completely.

$$-3x^3 - 9x^2 + 30x$$

- ☐ A. $-3x(x + 5)(x - 2)$
- ☐ B. $-3(x^3 + 3x^2 - 10x)$
- ☐ C. $3x(x + 5)(x - 2)$
- ☐ D. $-3(x^2 + 5)(x + 2)$

Question 11 .

Factor the following polynomial completely.

$$0.6x^2 - 3.6x + 3$$

- ☐ A. $-0.6(x^2 + 6x + 5)$
- ☐ B. $0.6(x - 1)(x + 5)$
- ☐ C. $0.6(x - 1)(x - 5)$
- ☐ D. $0.6(x^2 - 6x + 5)$

Question 12 .

Whitley has run 19 miles. His slowest running time for a mile was 9 minutes and 14 seconds. His fastest running time for a mile was 7 minutes and 58 seconds. What is a reasonable estimate for how much time Whitley has spent running these 19 miles?

- ☐ A. 190 minutes
- ☐ B. 304 minutes
- ☐ C. 114 minutes
- ☐ D. 161.5 minutes

Question 13 .

A polynomial expression is shown below.

$$(4x^4 + 3x^2 - 1) + (mx^3 + 2)(3x^2 + 1)$$

The expression is simplified to $15x^5 + 4x^4 + 5x^3 + 9x^2 + 1$.

What is the value of m ?

- ☐ A. -3
- ☐ B. 3
- ☐ C. 5
- ☐ D. 15

Question 14 .

Simplify the expression given below.

$$(16x^3 - 2) - (14x^3 - 30)$$

- ☐ A. $2x^3 + 28$
- ☐ B. $2x^3 + 14x^2 - 28$
- ☐ C. $14x^3 - 11x^2 + 28$
- ☐ D. $16x^3 - 13x^2 + 32$

Question 15 .

Simplify.

$$\sqrt{200}$$

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

Question 16 .

Multiply: $(2x - 5)(4x^2 + 7x - 11)$

- ☐ A. $8x^3 - 6x^2 - 57x - 55$
- ☐ B. $8x^3 - 6x^2 - 57x + 55$
- ☐ C. $8x^2 - 57x + 55$
- ☐ D. $8x^3 - 34x^2 - 57x + 55$

Question 17 .

$$35x^3yz^3 \quad 25x^4y$$

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

- ☐ A. $175x^4yz^3$
- ☐ B. $175x^7y^2z^3$
- ☐ C. $5x^4yz^3$
- ☐ D. $5x^3y$

Question 18 .

Simplify the following expression.

$$\frac{x^2 + 4x - 32}{(x + 8)(x + 2)}$$

- ☐ A. 1
- ☐ B. $\frac{x - 4}{x + 4}$
- ☐ C. $\frac{x + 8}{x + 2}$
- ☐ D. $\frac{x - 4}{x + 2}$

Question 19 .

When factored completely, which is a factor of $3x^3 - 9x^2 - 12x$?

- ☐ A. $(x - 3)$
- ☐ B. $(x - 4)$
- ☐ C. $(3x - 1)$
- ☐ D. $(3x - 4)$

Question 20 .

Solve the following.

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

- ☐ A. 6
- ☐ B. 18
- ☐ C. $3\sqrt{15}$
- ☐ D. 5

Question 21 .

Simplify the following expression.

$$(2x - 11)^2$$

- ☐ A. $4x^2 + 44x + 121$
- ☐ B. $4x^2 - 44x + 121$
- ☐ C. $4x^2 - 121$
- ☐ D. $4x^2 - 22x + 121$

Question 22 .

Factor the following polynomial completely.

$$9x^3 - 90x^2 + 216x$$

- ☐ A. $9x(x - 4)(x - 6)$
- ☐ B. $-9(x^3 + 10x + 24)$
- ☐ C. $9(x^3 - 10x^2 + 24x)$
- ☐ D. $9x(x - 4)(x + 6)$

Question 23 .

Simplify the following expression.

$$\frac{2x^7 - 6x^3}{2x^3}$$

- ☐ A. $-4x^4$
- ☐ B. $x^4 - 6$
- ☐ C. $x^4 + 3$
- ☐ D. $x^4 - 3$

Answers

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