Name _____ Date _____

CHAPTER 9 Standardized Test

For use after Chapter 9

Multiple Choice

1. What is the degree of $-5a^2b + 4a^2 - 2b + 5$?

Ⓐ -5 Ⓑ 2 Ⓒ 3 Ⓓ 4

2. Which expression is *not* a monomial?

Ⓐ $-2n$ Ⓑ $\frac{m}{2}$ Ⓒ r^2 Ⓓ $3p^{-3}$

3. What is the sum of $6m^2 - 5m + 4$ and $7m^2 + 2m - 5$?

Ⓐ $13m^2 - 7m - 9$

Ⓑ $13m^2 - 3m - 1$

Ⓒ $13m^2 + 3m - 1$

Ⓓ $13m^2 - 3m + 1$

4. What is $(12s^2 + 8s - 6) - (9s^2 - 2s + 5)$ in simplest form?

Ⓐ $3s^2 + 6s - 1$ Ⓑ $3s^2 + 10s - 11$

Ⓒ $3s^2 + 10s + 11$ Ⓓ $3s^2 + 6s - 11$

5. What is the product of $x + 5$ and $3x - 2$?

Ⓐ $3x^2 + 13x - 10$ Ⓑ $3x^2 - 10$

Ⓒ $3x^2 + 17x - 10$ Ⓓ $3x^2 - 13x - 10$

6. Which polynomial represents $f(x) \cdot g(x)$ if $f(x) = -4x^2$ and $g(x) = x^3 + 2x^2 - 5x + 3$?

Ⓐ $-4x^5 + 8x^4 - 20x^3 - 12x^2$

Ⓑ $-4x^5 - 8x^3 - 20x^3 - 12x^2$

Ⓒ $-4x^5 - 8x^4 + 20x^3 - 12x^2$

Ⓓ $-4x^5 + 8x^4 + 20x^3 - 12x^2$

7. What is the simplest form of $(5x + 2)(5x - 2)$?

Ⓐ $25x^2 - 4$ Ⓑ $10x^2$

Ⓒ $25x^2 + 10x - 4$ Ⓓ $25x^2 - 20x - 4$

8. What is the simplest form of $(2n + 3)^2$?

Ⓐ $4n^2 + 12n + 6$ Ⓑ $4n^2 + 6n + 9$

Ⓒ $4n^2 + 9$ Ⓓ $4n^2 + 12n + 9$

9. Which of the following are the roots of the equation $(y - 3)(y + 2) = 0$?

Ⓐ 2 and 3 Ⓑ -2 and 3

Ⓒ -3 and 2 Ⓓ -3 and -2

10. What is the greatest monomial factor of $32x^5 - 12x^2$?

Ⓐ $4x^2$ Ⓑ $32x^5$

Ⓒ $12x^2$ Ⓓ $20x^3$

11. What are the roots of the equation $5x^2 = x$?

Ⓐ -5 and 0 Ⓑ 0 and $-\frac{1}{5}$

Ⓒ 0 and $\frac{1}{5}$ Ⓓ 0 and 5

12. Which of the following is the correct factorization of $x^2 - 15x + 56$?

Ⓐ $(x - 7)(x - 8)$

Ⓑ $(x + 7)(x - 8)$

Ⓒ $(x - 7)(x + 8)$

Ⓓ $(x + 7)(x + 8)$

13. What are the roots of the equation $x^2 + 30x = 1000$?

Ⓐ 20 and 50 Ⓑ -50 and -20

Ⓒ -20 and 50 Ⓓ -50 and 20

14. Which of the following is the correct factorization of $6x^2 - 2x - 20$?

Ⓐ $(3x - 5)(2x + 4)$

Ⓑ $(3x + 5)(2x - 4)$

Ⓒ $(6x - 10)(x + 2)$

Ⓓ $(6x + 2)(x - 10)$

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CHAPTER 9

Standardized Test *continued*

For use after Chapter 9

15. Which of the following is the correct factorization of $-y^2 + y + 6$?

Ⓐ $(-y + 3)(y - 2)$

Ⓑ $-(y + 6)(y + 1)$

Ⓒ $-(y + 2)(y - 3)$

Ⓓ $-(y + 2)(y + 3)$

16. What are the roots of the equation $1.5x^2 - 4.5x = -3$?

Ⓐ -2 and -1 Ⓑ -1 and 1

Ⓒ 1 and 2 Ⓓ 2 and 3

17. Which of the following is the correct factorization of $-60m^2 + 15n^2$?

Ⓐ $15(2m + n)^2$

Ⓑ $15(2m - n)(2m + n)$

Ⓒ $-15(2m - n)^2$

Ⓓ $-15(2m - n)(2m + n)$

18. Which of the following is the correct factorization of $3x^3 + 24x^2 - 27x$?

Ⓐ $3x(x + 9)(x - 1)$

Ⓑ $3x(x - 9)(x + 1)$

Ⓒ $3x(x - 9)(x - 1)$

Ⓓ $3x(x + 9)(x + 1)$

19. What is the completely factored form of $4x^5 - 256x^3$?

Ⓐ $4x^3(x - 8)^2$

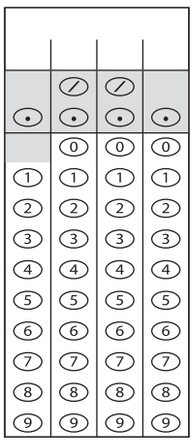
Ⓑ $4x^3(x + 8)(x - 8)$

Ⓒ $4x^3(x^2 - 64)$

Ⓓ $4x^3(x + 8)^2$

Gridded Answer

20. The square of the binomial $x - 4$ has the form $x^2 - ax + 16$. What is the value of a?



Short Response

21. You made a square card to send to a friend. The card did not fit in the envelope so you had to trim the card. You trimmed 4 inches from the length and 5 inches from the width. The area of the resulting card is 20 square inches.

a. What were the original dimensions of the card?

b. What was the perimeter of the original card?

c. What is the difference in the areas of the original and trimmed cards?

Extended Response

22. The length of a box is 2 centimeters less than its height. The width of the box is 7 centimeters more than its height.

a. Draw a diagram of the box and label its dimensions in terms of the height h.

b. Write a polynomial that represents the volume of the box.

c. If the box has a volume of 180 cubic centimeters, what is its surface area? *Explain*.