

CHAPTER
9**Chapter Test A***For use after Chapter 9***Find the sum or difference.**

1. $(4a^3 - 4a^2) + (6a^3 + 5a^2)$ 2. $(2y^2 - 4y) - (-y^3 + 2)$
 3. $(3x^2 + 2x - 2) - (5x^2 - 5x + 6)$
 4. $(2h^2 - 7h + 10) + (h^2 + 4h + 7)$

In Exercises 5 and 6, use the following information.

During the period 1990–2002, the average cost D (in dollars) for a new domestic car and the average cost I (in dollars) for a new imported car can be modeled by

$$D = 442.14t + 14,433 \quad \text{and} \quad I = -137.63t^2 + 2705.2t + 15,111$$

where t is the number of years since 1990.

5. Write an equation that gives the total average cost (in dollars) for domestic and imported cars as a function of the number of years since 1990.
 6. What was the total average cost for domestic and imported cars in 2000?

Find the product.

7. $n(2n^3 - 3n + 2)$ 8. $(2w - 3)(4w - 7)$
 9. $(d^2 + 3d + 2)(d + 1)$ 10. $(p + 3)(p - 3)$
 11. $(t - 4)^2$ 12. $(2s - 5)(2s + 5)$

In Exercises 13 and 14, use the following information.

In humans, the gene B is for brown eyes, and the gene b is for blue eyes. Any gene combination with a B results in brown eyes. Suppose the parents have the same gene combination Bb . The Punnett square shows the possible gene combinations of the offspring and the resulting eye color.

		Mother	
		B	b
Father	B	BB	Bb
	b	Bb	bb

13. What percent of the possible gene combinations of the offspring result in blue eyes?
 14. Show how you could use a polynomial to model the possible gene combinations of the offspring.

Solve the equation.

15. $(q + 7)(q - 4) = 0$ 16. $(4z - 1)(z + 5) = 0$

Answers

1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
 13. _____
 14. _____
 15. _____
 16. _____

Chapter Test A *continued*
For use after Chapter 9**Factor out the greatest common monomial factor.**

17. $4c^8 - 8c^5$

18. $6f^2g^3 + 12g$

19. $2k^3 + 6k^2 - 14k$

Solve the equation.

20. $3m^2 - 9m = 0$

21. $7u^2 = 3u$

In Exercises 22 and 23, use the following information.

A frog leaps from a lily pad in a pond into the air with an initial vertical velocity of 20 feet per second. The height h (in feet) of the frog can be modeled by $h = -16t^2 + vt + s$ where t is the time (in seconds) the frog has been in the air, v is the initial vertical velocity (in feet per second), and s is the initial height.

22. Write an equation that gives the height of the frog as a function of the time (in seconds) since leaving the lily pad.

23. After how many seconds does the frog land in the water?

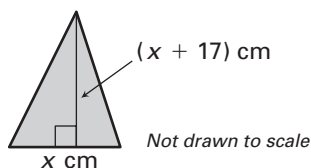
Factor the trinomial.

24. $x^2 + 9x + 14$

25. $y^2 - y - 12$

26. $3m^2 + 20m + 12$

27. Find the dimensions of the triangle that has an area of 30 square centimeters.

**Factor the polynomial completely.**

28. $3x^3 + 15x^2 + 18x$

29. $2s^2 - 18$

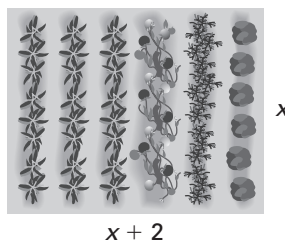
30. $r(r + 3) + 7(r + 3)$

Solve the equation.

31. $b^4 - 3b^3 - 10b^2 = 0$

32. $j(j + 3) = 28$

33. A small vegetable garden has an area of 80 square feet. Its length is 2 feet more than the width. Find the dimensions of the garden.

**Answers**

17. _____

18. _____

19. _____

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22. _____

23. _____

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27. _____

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31. _____

32. _____

33. _____