

Chapter 8 Review Worksheet

Name: Key

Find the degree of each monomial.

1. $13f^2g^4$

6th degree

2. $-2ab$

quadratic

3. $7m^5n$

6th degree

Name each polynomial based on its degree AND number of terms.

4. $9z^2$

quadratic, monomial

5. $2x + 1$

linear binomial

6. $x^3 + 3x^2 + 7x$

cubic trinomial

7. The perimeter of a triangle is $10x - 3$. Two sides have the following lengths: $2x$ and $5x - 4$. What is the length of the third side?

$$2x + 5x - 4 + \underline{\hspace{2cm}} = 10x - 3$$

$$7x - 4 + \underline{\hspace{2cm}} = 10x - 3$$

$$\boxed{3x + 1}$$

$$\begin{array}{r} 10x - 3 \\ - (7x - 4) \\ \hline 3x + 1 \end{array}$$

Simplify each sum or difference.

8. $10f^5 + 8f^5$

$$\boxed{18f^5}$$

9. $27j^3k - 28j^3k$

$$\boxed{-1j^3k}$$

10. $(8h - 3h) + (4h^2 + 2h)$

$$\boxed{4h^2 + 7h}$$

Simplify each product.

11. $5x(x + 8)$

$$\boxed{5x^2 + 40x}$$

12. $-2z^2(z - 10)$

$$\boxed{-2z^3 + 20z^2}$$

13. $3x(7x^2 - 5x + 4)$

$$\boxed{21x^3 - 15x^2 + 12x}$$

14. $(x - 3)(4x - 5)$

$$4x^2 - 5x - 12x + 15$$

$$\boxed{4x^2 - 17x + 15}$$

15. $(2x + 5)(x + 6)$

$$2x^2 + 12x + 5x + 30$$

$$\boxed{2x^2 + 17x + 30}$$

16. $(3x - 7)(4x + 9)$

$$12x^2 + 27x - 28x - 63$$

$$\boxed{12x^2 - x - 63}$$

17. $(x + 5)(x^2 - 3x + 6)$

$$x^3 - 3x^2 + 6x + 5x^2 - 15x + 30$$

$$\boxed{x^3 + 2x^2 - 9x + 30}$$

18. $(4c + 3)(2c^2 - 6c - 1)$

$$8c^3 - 24c^2 - 4c + 6c^2 - 18c - 3$$

$$\boxed{8c^3 - 18c^2 - 22c - 3}$$

19. $(5s + 6)^2(5s + 6)$

$$25s^2 + 30s + 30s + 36$$

$$\boxed{25s^2 + 60s + 36}$$

20. $(h + 4)(h - 4)$

$h^2 - 4h + 4h - 16$
 $h^2 - 16$

21. $(4x - 10)^2$

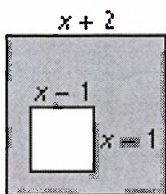
$(4x - 10)(4x - 10)$
 $16x^2 - 40x - 40x + 100$
 $16x^2 - 80x + 100$

22. $(6k^2 + 4k)(6k^2 - 4k)$

$36k^4 - 24k^3 + 24k^3 - 16k^2$
 $36k^4 - 16k^2$

Write a simplified expression for the area of the shaded region.

23.



$(x + 2)^2 - (x - 1)^2$
 $(x^2 + 4x + 4) - (x^2 - 2x + 1)$
 $6x + 3$

Factor each expression completely.

24. $9x - 6$

$3(3x - 2)$

25. $14n^3 - 2n^2 + 8n$

$2n(7n^2 - n + 4)$

26. $18b^2c^3 + 24bc^5$

$6bc^3(3b + 4c^2)$

27. $r^2 + 3r - 10$

$(r + 5)(r - 2)$

28. $g^2 - 4g - 12$

$(g + 2)(g - 6)$

29. $m^2 + 12m + 35$

$(m + 5)(m + 7)$

30. $2d^2 - 23d + 11$

$(2d - 1)(d - 11)$

31. $6h^2 + 21h + 15$

$3(2h^2 + 7h + 5)$
 $3(2h + 5)(h + 1)$

32. $(18n^3 - 12n^2) \div (21n - 14)$

$6n^2(3n - 2) \div 7(3n - 2)$
 $(3n - 2)(6n^2 + 7)$

33. $a^2 - 22a + 121$

$(a - 11)(a - 11)$
 $(a - 11)^2$

34. $x^2 - 225$

$(x + 15)(x - 15)$

35. $16c^2 - 25$

$(4c + 5)(4c - 5)$

36. The area of a rectangular garden is $5x^2 + 43x + 24$. The width of the tray is $x + 8$. What is the length?

$(x + 8)(5x + 3)$ so $(5x + 3)$