Name: Whitaker

Chapter 9 Practice Test

Find the product.

1. $(x^2 + 3)(x^2 + 6)$

$x^4 + 9x^2 + 18$

2. $(7x + 2)^2$

$49x^2 + 28x + 4$

3. $(x^2 - 7)(x^3 + 2x^2 + 3)$

$x^5 + 2x^4 - 7x^3 - 11x^2 - 21$

$x^5 + 2x^4 + 3x^2 - 7x^3 - 14x^2 - 21$

4. $m(7m^2 - 9m + 1)$

$7m^3 - 9m^2 + m$

5. $(6x - 5)(4x + 3)$

$24x^2 - 2x - 15$

6. $(11m - 9n)(2m - 5n)$

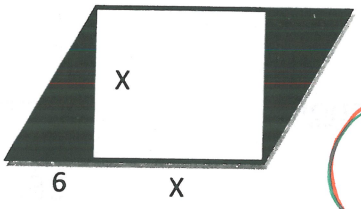
$22m^2 - 73mn + 45n^2$

Solve.

7. $(4x + 13)(4x - 13)$

$16x^2 - 169$

8. Find the area of the SHADED region.



$A = bh$ $A = s^2$

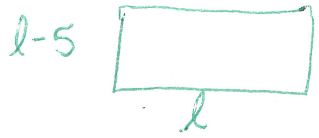
$A = x(x+6)$ $A = x^2$

$A = x^2 + 6x$

$x^2 + 6x - x^2$

$6x$

9. Greg intends to place a 300 square foot pool in his back yard. If the width of the pool is 5 ft shorter than the length, what are the dimensions of the pool?



$l(l-5) = 300$

$l^2 - 5l - 300 = 0$

$(l-20)(l+15) = 0$

$l = 20, -15$

$l = 20$ ft

$w = 15$ ft

Solve by factoring.

10. $4a^2 + 4a - 8 = 0$

$4(a^2 + a - 2) = 0$

$4(a+2)(a-1) = 0$

$a = -2, 1$

11. $14 = 9x^2 - 15x$

$0 = 9x^2 - 15x - 14$

$0 = (9x^2 - 21x)(6x - 14)$

$0 = 3x(3x-7)2(3x-7)$

$0 = (3x-7)(3x+2)$

$x = \frac{7}{3}, -\frac{2}{3}$

+126, -21, +6, -15

12. $b^2 + 7b - 18 = 0$

$(b+9)(b-2) = 0$

$b = -9, 2$

13. $-2 = 24y^2 + 19y$

$0 = 24y^2 + 19y + 2$

$0 = (24y^2 + 3y)(16y + 2)$

$0 = 3y(8y+1)2(8y+1)$

$0 = (8y+1)(3y+2)$

$y = -\frac{1}{8}, -\frac{2}{3}$

48, 3, 16, 19

Simplify.

14. $(7q^2 + 4q - 12) - (4q^2 + 3q - 14)$

$3q^2 + q + 2$

15. $3(2x^2 - 6x + 4) + (-9x^2 + 18x + 5)$

$6x^2 - 18x + 12 - 9x^2 + 18x + 5$

$-3x^2 + 17$

Name: _____

Factor.

16. $6x^2y + 15xy^2$ $3xy(2x+5y)$

17. $8x^3 - 4x^2 + 6x - 3$ $4x^2(2x-1) 3(2x-1)$ $(4x^2+3)(2x-1)$

18. $2a^4 - 10a^3 - 3a^2 + 15a$ $(a-5)(2a^3-3a)$ $2a^3(a-5) -3a(a-5)$ $(a-5)a(2a^2-3)$

19. $c^4 - 625$ $(c^2-25)(c^2+25)$ $(c-5)(c+5)(c^2+25)$

20. $3x^8 - 768x^4$ $3x^4(x^4-256)$ $3x^4(x^2-16)(x^2+16)$ $3x^4(x+4)(x-4)(x^2+16)$

21. $81x^2 - 100$ $(9x-10)(9x+10)$

22. $m^2 - m - 6$ $(m-3)(m+2)$

23. $-x^2 + 4x + 12$ ~~$(x+2)(-x+6)$~~ $-(x^2-4x-12)$ $-(x-6)(x+2)$

Label.

24. Name the polynomial by degree and term. a. $x^3 + 6$ 3rd degree binomial b. $4x^2 - 6x + 12$ 2nd degree trinomial

Find the zeros of the function.

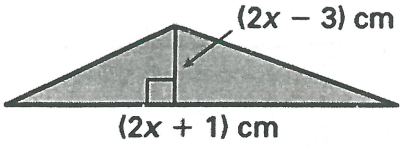
25. $f(x) = x^2 + 3x - 28$ $(x+7)(x-4)$ $x = -7, 4$

26. $f(x) = t^2 - 400$ $(t-20)(t+20)$ $t = 20, -20$

Solve.

27. Find the dimensions of the triangle that has the given area.

Area: 2.5 square centimeters



$A = \frac{1}{2}bh$

$2.5 = .5(2x+1)(2x-3)$

$2.5 = .5(4x^2-4x-3)$

$2.5 = 2x^2 - 2x - 1.5$

$0 = 2x^2 - 2x - 4$

$0 = 2(x^2 - x - 2)$

$0 = 2(x-2)(x+1)$

$x = 2, -1$

base = 5cm
height = 1cm

l + w are equal

28. 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 for the card? 9 x 9

b. What was the perimeter of the original card? 36 inches

c. What is the difference in the areas of the original and trimmed cards? 81-20

~~$20 = (l-4)(w-5)$~~

~~$20 =$~~

$20 = (s-4)(s-5)$

$20 = s^2 - 9s + 20$

$0 = s^2 - 9s$

$0 = s(s-9)$

$s = 0, 9$

61 inches^2