

# Chapter 8 Practice Test

SCORE \_\_\_\_\_

1. Write  $-2x + 3x^6 + 5 + 2x^3$  in standard form.

1.  $3x^6 + 2x^3 - 2x + 5$

2. Find the difference.  $(11m^2 - 2mt + 8t^2) - (8m^2 + 4mt - 2t^2)$

$11m^2 - 2mt + 8t^2 - 8m^2 - 4mt + 2t^2$

2.  $3m^2 - 6mt + 10t^2$

3. Simplify  $3a^3(2a + 4) - 3a(2a^2 - 2a + 5) - 3(a + 7)$ .

$6a^4 + 12a^3 - 6a^3 + 6a^2 - 15a - 3a - 21$

3.  $6a^4 + 6a^3 + 6a^2 - 18a - 21$

4. Factor  $56x^3y + 42xy^2 - 77x^2y^3$  completely. GCF:  $7xy$

$7xy(8x^2 + 6y - 11xy^2)$

4.  $7xy(8x^2 + 6y - 11xy^2)$

5. The length of a rectangular garden is 8 feet longer than its width. Write an expression that represents the area of the rectangle in standard form.

$w \times (w+8) = w(w+8)$

5.  $w^2 + 8w$

6. Solve for  $n$ .  $8n + 11 = 4 + 5(2n - 1)$

$8n + 11 = 4 + 10n - 5$   
 $11 = 2n - 1$   
 $12 = 2n$   
 $n = 6$

6.  $n = 6$

7. Factor:  $t^2 - 11t + 24$

$(t-3)(t-8)$

$t^2 - 11t + 24$   
 $(t-3)(t-8)$

7.  $(t-3)(t-8)$

8. Multiply:  $(t + 4)(2t^2 + 9t - 13)$

8.  $2t^3 + 17t^2 + 23t - 52$

9. Solve:  $8n^2 + 4 = 12n$

$8n^2 - 12n + 4 = 0$   
 $4(2n^2 - 3n + 1) = 0$

$(2n-1)(n-1) = 0$   
 $2n-1=0 \Rightarrow n=1/2$   
 $n-1=0 \Rightarrow n=1$

9.  $n = 1, 1/2$

10. Multiply:  $(5c^2 - 4)^2$

$25c^4 - 40c^2 + 16$

10.  $25c^4 - 40c^2 + 16$

11. Factor  $10y^2 - 31y + 15$

$(5y-3)(2y-5)$

11.  $(5y-3)(2y-5)$

12. Solve:  $a^2 + 13a = -42$

$a^2 + 13a + 42 = 0$

$(a+6)(a+7) = 0$

12.  $a = -6, -7$

# Chapter 8 Test, Form 2C (continued)

Solve each equation. Check the solutions.

13. Factor:  $49w^2 - 25$

$$\begin{array}{r} \diagup \quad \diagdown \\ 7w \cdot 7w \quad 5 \cdot 5 \end{array}$$

13.  $(7w+5)(7w-5)$

14. Solve:  $-6(3n-2) = 4(-3-2n)$   $n = \frac{24}{10} = \frac{12}{5}$

$$-18n + 12 = -12 - 8n$$

$$-10n = -24 \quad 6y^2 + 5y - 2y^2 - 15$$

15. Solve:  $4y^2 + 16y + 7 = (6y^2 + 5y) - (2y^2 + 15)$

$$4y^2 + 16y + 7 = 4y^2 + 5y - 15$$

$$11y = -22$$

14.  $b = 12/c$

15.  $y = 2$

16. Factor completely:  $8n^2 - 48n + 40$  HINT: GCF first!

$$8(n^2 - 6n + 5) \quad -1 \times 5$$

16.  $8(n-1)(n-5)$

17. If the area of a square is multiplied by four, the area becomes 25 square inches. Find the length  $x$  of a side of the square.

$$\frac{4x^2}{4} = \frac{25}{4} \quad x^2 = \frac{25}{4} \quad x = \sqrt{\frac{25}{4}}$$

17.  $x = 5/2$

18. **BASEBALL** Tonisha hit a baseball into the air with an initial upward velocity of 48 feet per second. The height  $h$  in feet of the ball above the ground can be modeled by  $h = -16t^2 + 48t + 2$ , where  $t$  is the time in seconds after Tonisha hit the baseball. Find the time it takes the ball to reach 38 feet above the ground.

$$h = 38 = -16t^2 + 48t + 2$$

$$\begin{array}{r} -12 \\ -6 \\ \hline 36 \end{array} \quad \begin{array}{r} -19 = 8t^2 - 24t - 1 \\ 0 = 8t^2 - 24t + 18 \\ 0 = 4t^2 - 12t + 9 \end{array}$$

18.  $t = 3/2$

19. The product of two consecutive even integers is 224. Find their sum.

$$\begin{array}{r} x \quad x+2 \\ \hline x^2 + 2x - 224 = 0 \end{array} \quad \begin{array}{r} 2 \quad 1 \quad 1 \quad 2 \\ (x+16)(x-14) = 0 \end{array}$$

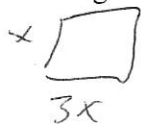
$(4+3)(4-3)$

$$\begin{array}{r} 4t^2 - 6t \\ -6t + 9 \\ \hline 9 \end{array}$$

14, 16 or -14, -16

19.  $\pm 30$  or  $-30$

20. The length of a rectangle is three times the width. The area is 64 square centimeters. What is the length?



$$\begin{array}{r} 3x^2 = 64 \\ x^2 = 192 \end{array}$$

20.  $x = \sqrt{192}$

**Bonus** Factor  $v^2x^2 - 9x^2 + v^2n^2 - 9n^2$  completely.

B. \_\_\_\_\_