

Chapter 10 Mid-Chapter Practice Test

SCORE _____

(Lessons 10-1 through 10-4)

Part I Write the letter for the correct answer in the blank at the right of each question.

1. Which expression has a range of $\{y | y \geq 2\}$?

- A $y = \sqrt{x-2}$ B $y = \sqrt{x+2}$ C $y = \sqrt{x}-2$ D $y = \sqrt{x}+2$

1. F

2. Which expression has a domain of $\{x | x \geq 1\}$?

- F $y = \sqrt{x-1}$ G $y = \sqrt{x+1}$ H $y = \sqrt{x}-1$ J $y = \sqrt{x}+1$

2. F

For Questions 3-5, simplify each expression.

3. $\sqrt{242} = 11\sqrt{2}$

③ $\begin{array}{r} 242 \\ 11 \\ \hline 2121 \\ \hline 1111 \end{array}$

④ $\begin{array}{r} 50 \\ 11 \\ \hline 252 \\ \hline 11 \end{array}$

⑤ $\begin{array}{r} 14 \cdot \sqrt{3} \\ 2\sqrt{3} \cdot \sqrt{2} \\ \hline \text{rationalize!} \\ \frac{\sqrt{3t}}{2 \cdot \sqrt{9}} = \frac{\sqrt{3t}}{2 \cdot 3} \end{array}$

3. $11\sqrt{2}$

4. $\sqrt{50x^2y^3}$

4. $5xy\sqrt{2y}$

5. $\sqrt{\frac{t}{12}} = \frac{\sqrt{t}}{\sqrt{12}}$

5. $\frac{\sqrt{3t}}{6}$

6. Solve $\sqrt{9n-2} - n = 2$.

$\sqrt{9n-2} = n+2$
 $9n-2 = (n+2)^2$
 $9n-2 = n^2+4n+4$
 $0 = n^2-5n+6$
 $0 = (n-2)(n-3)$

6. $n=2, 3$

7. Solve $\sqrt{3b-7} = \sqrt{9-b}$

$3b-7 = 9-b$
 $4b = 16$
 $b = 4$

4	5
16	20
-5	-25

7. $b=4$

Part II

Simplify each expression.

8. $\sqrt{14}(3\sqrt{2}-5\sqrt{7}) = 3\sqrt{28}-5\sqrt{98}$
 $= 3 \cdot 2\sqrt{7} - 5 \cdot 7\sqrt{2}$
 $= 6\sqrt{7} - 35\sqrt{2}$

9. $(4\sqrt{3}+5)(4\sqrt{3}-5) = 16 \cdot 3 - 25$
 $= 48 - 25$

8. $6\sqrt{7} - 35\sqrt{2}$

10. $\sqrt{242} + 3\sqrt{162}$

$11\sqrt{2} + 27\sqrt{2} = 38\sqrt{2}$

12. $3\sqrt{32} - 2\sqrt{128} + \sqrt{98}$

$6\sqrt{2} - 16\sqrt{2} + 7\sqrt{2} = -3\sqrt{2}$

11. $7\sqrt{3} - 4\sqrt{6} - \sqrt{3}$

$x^2 - 19x + 84 = 0$

9. 23

10. $38\sqrt{2}$

For Questions 13 and 14, solve each equation.

13. $3\sqrt{3x}-2=10$
 $3\sqrt{3x}=12$
 $\sqrt{3x}=4$
 $3x=16$

14. $\sqrt{x-4} = (x-9)^2$
 $x-4 = x^2-18x+81$
 $x^2-19x+85=0$

11. $6\sqrt{3} - 4\sqrt{6}$

12. $-3\sqrt{2}$

15. A square has an area of 75 square inches. The formula for the area A of a square with side length l is $A = l^2$. Find the length of one side of the square.

$75 = l^2$
 $l = \sqrt{75} = 5\sqrt{3}$
 $l = 5\sqrt{3}$

13. $x = 16/3$

14. $x = 7, 12$

15. $l = 5\sqrt{3}$