

Chapter 10 Mid-Chapter Practice Test

(Lessons 10-1 through 10-4)

SCORE _____

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 $\{y \mid y \geq 2\}$?

A $y = \sqrt{x-2}$

B $y = \sqrt{x+2}$

C $y = \sqrt{x}-2$

D $y = \sqrt{x}+2$

1. D

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

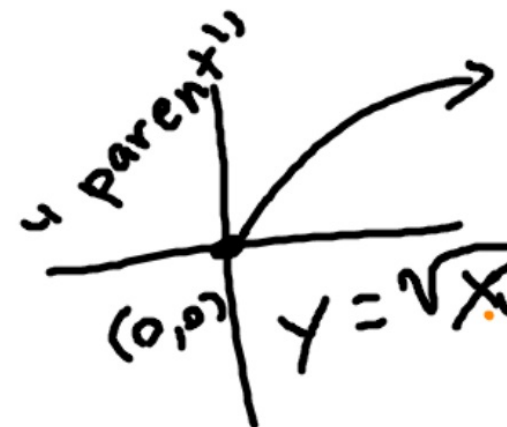
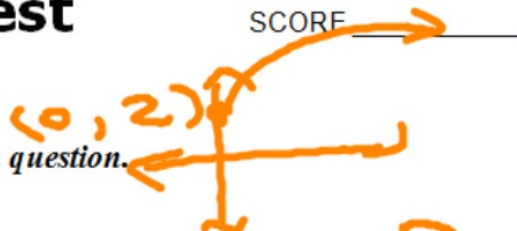
F $y = \sqrt{x-1}$

G $y = \sqrt{x+1}$

H $y = \sqrt{x}-1$

J $y = \sqrt{x}+1$

2. F



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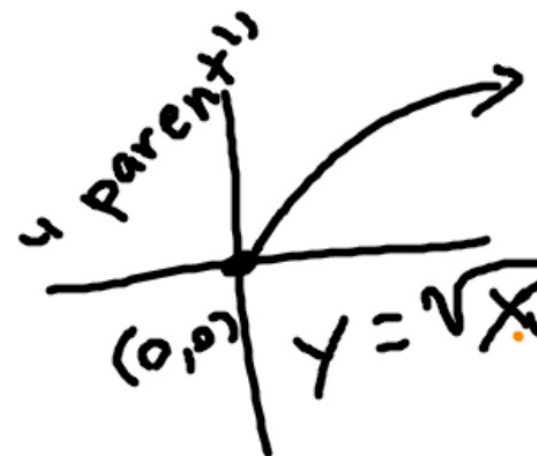
F $y = \sqrt{x-1}$

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2. F



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

$$\sqrt{9n-2} - n = 2 \quad \text{6. } \underline{n=2, 3}$$

$$\quad \quad \quad +n \quad +n$$

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

$$\left(\sqrt{9n-2}\right)^2 = (n+2)^2 \quad \text{7. } \underline{\hspace{2cm}}$$

$$9n-2 = n^2 + 9n + 4$$

$$\begin{array}{r} 9n-2 \\ -9n+2 \\ \hline \end{array} \quad \begin{array}{r} n^2 + 9n + 4 \\ -9n + 2 \\ \hline \end{array}$$

$$0 = n^2 - 5n + 6$$

$$(n-2)(n-3) = 0$$

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

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

$$\begin{array}{r} 3b - 7 = 9 - b \\ + \quad b + 7 \quad + 7 + b \\ \hline \end{array}$$

$$4b = 16$$

$$b = 4$$

6. _____

7. $b = 4$

8

$$3\sqrt{2 \cdot 2 \cdot 7} - 5\sqrt{7 \cdot 7 \cdot 2}$$

Part II

Simplify each expression.

8. $\sqrt{14}(3\sqrt{2} - 5\sqrt{7})$

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

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

diff. of squares!

$$(a+b)(a-b)$$

9. $(4\sqrt{3} + 5)(4\sqrt{3} - 5)$

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

~~7~~

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

8. $\frac{23}{-16\sqrt{2}}$

9. $\frac{23}{-16\sqrt{2}}$

10. $\frac{23}{-16\sqrt{2}}$

11. $\frac{23}{-16\sqrt{2}}$

10

$$\sqrt{2 \cdot 121} = 11\sqrt{2}$$

$$3\sqrt{2 \cdot 81} = 27\sqrt{2}$$

$$11\sqrt{2} - 27\sqrt{2}$$

9

$$a^2 - b^2$$

$$= (4\sqrt{3})^2 - (5)^2$$

$$= 16 \cdot 3 - 25$$

$$= 48 - 25$$

(13) $3\sqrt{3x} - 2 = 10$

$$\begin{array}{r} 3\sqrt{3x} - 2 = 10 \\ +2 \quad +2 \\ \hline 3\sqrt{3x} = 12 \\ \underline{\quad 3} \end{array}$$

$(\sqrt{3x})^2 = (4)^2$

$$3x = 16$$

$$x = \frac{16}{3}$$

$(x-a)(x-a)$

$\frac{16}{3}$

For Questions 13 and 14, solve each equation.

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

14. $\sqrt{x-4} = (x-9)^2$

(14) $x-4 = x^2 - 18x + 81$

$$\begin{array}{r} x-4 \quad \quad \quad -x+4 \\ \hline 0 = x^2 - 19x + 85 \end{array}$$

$\odot = x^2 - 19x + 85 \odot$

11. _____

12. _____

13. $\frac{16}{3}$

14. _____

15. _____