

Name: _____

SM3 Unit5 Review

Solve each equation for x over the set of real numbers.

1) $\sqrt{x} = 7$

2) $\sqrt{x} = -2$

3) $\sqrt{x} = \frac{1}{2}$

4) $\sqrt{7x} = 21$

5) $\sqrt{20x} = -10$

6) $\sqrt{4x} = 3$

7) $15\sqrt{x} = 30$

8) $\sqrt{x^2 + 45} = x + 5$

9) $\sqrt{2x - 1} = 11$

10) $\sqrt{5x - 1} - \sqrt{x + 3} = 0$

11) $x\sqrt{6} - \sqrt{13x - 6} = 0$

12) $x + 7 = \sqrt{13 - x}$

13) $\sqrt{8x + 1} + 3 = \sqrt{3x + 7} + 5$

14) $\sqrt[3]{x} - 5 = 2$

15) $\sqrt[3]{x - 5} = 4$

16) $\sqrt[4]{x + 6} = 1$

17) $2\sqrt[4]{x} = 6$

18) $5\sqrt[3]{x + 2} + 1 = -24$

19) $25\sqrt[6]{x - 2} = 75$

20) $x^{2/3} + 3 = 39$

21) $5x^{2/5} - 1 = 44$

22) $x^{3/2} = -8$

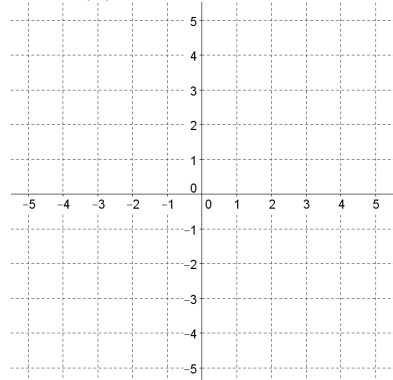
23) $(x + 1)^{4/5} = 16$

24) $(12x + 8)^{3/7} = 8$

25) $\frac{3}{5}(50x + 25)^{4/3} = 375$

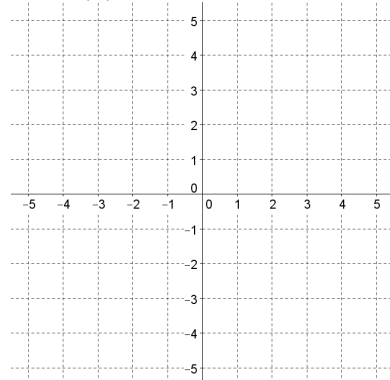
Sketch the radical function with at least 3 accurate points. State the domain and range of the function.

26) $a(x) = -\sqrt{x + 2} + 3$



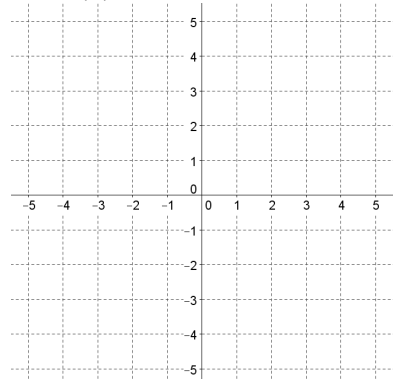
D:
R:

27) $b(x) \leq 3\sqrt{x - 2}$



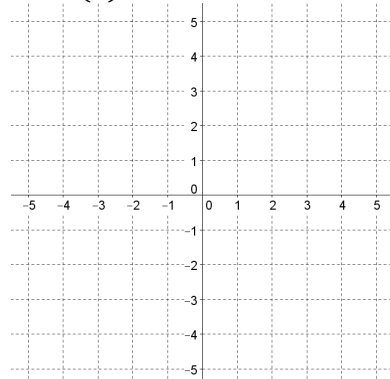
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28) $c(x) = 2\sqrt[3]{x} - 1$



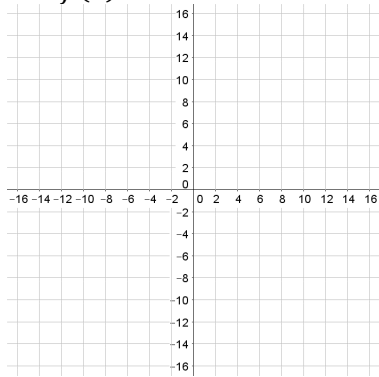
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29) $d(x) > \sqrt[3]{x + 1} - 4$



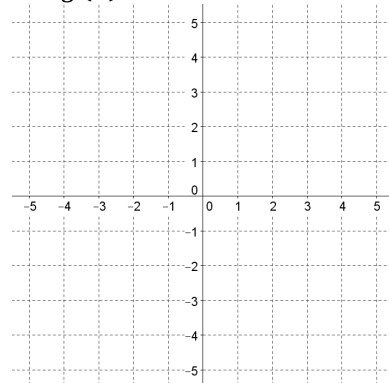
D:
R:

30) $f(x) \geq 2\sqrt[4]{x+8} - 6$



D:
R:

31) $g(x) = \sqrt[5]{x} - 2$



D:
R:

Problems: Given $f(x) = 4x - 1$ and $g(x) = 9x + 4$, simplify the expressions:

32) $(f \circ g)(x)$

33) $(g \circ f)(x)$

34) $(f \circ g)(2)$

35) $(g \circ f)(0)$

Given $f(x) = \{(1, 3), (2, 3), (4, 4), (3, 4), (5, 1)\}$ and $g(x) = \{(0, 2), (1, 2), (2, 3), (3, 2), (4, 0)\}$, simplify the expressions.

36) $(g \circ f)(x)$

37) $(f \circ g)(x)$

Given $r(x) = 3x$, $s(x) = \sqrt{x}$, and $t(x) = x + 1$, simplify the expressions:

38) $(r \circ s \circ t)(x)$

39) $(r \circ t \circ s)(x)$