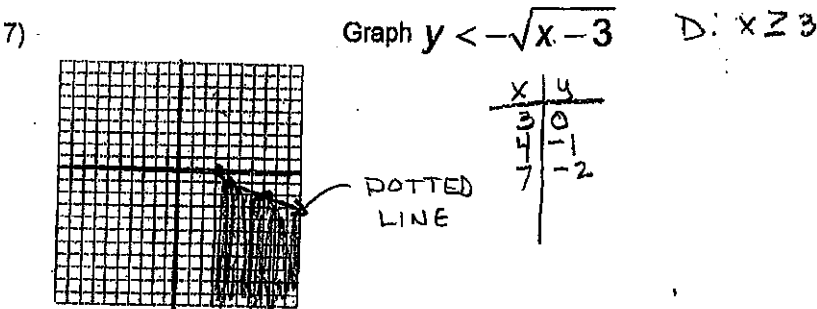
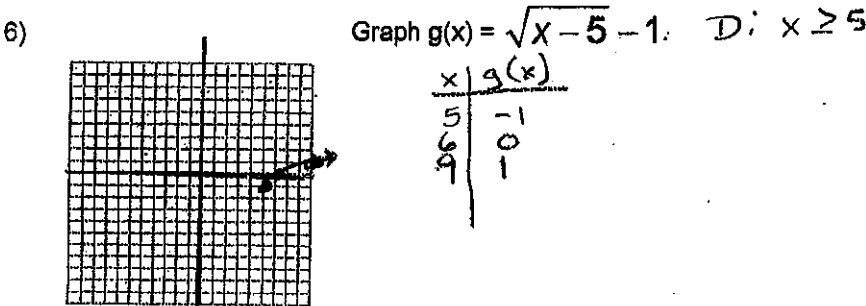


- 1) $18x^2 + 45x + 27$ Find $[f \circ g](x)$ if $f(x) = 2x^2 - x - 1$ and $g(x) = 3x + 4$.
 $2(3x+4)^2 - (3x+4) - 1$
 $2(9x^2 + 24x + 16) - 3x - 4 - 1$
 $18x^2 + 48x + 32 - 3x - 5$
- 2) ~~151~~ Find $(g \circ f)(-4)$ if $f(x) = 2x^2 - x + 1$ and $g(x) = 4x + 3$.
 $f(-4) = 2(-4)^2 - (-4) + 1$
 $32 + 4 + 1 = 37$
 $g(37) = 4(37) + 3$
- 3) $f^{-1}(x) = \frac{-4}{5}x + \frac{32}{5}$ Find $f^{-1}(x)$ if $f(x) = -5/4x + 8$.
 $y = -\frac{5}{4}x + 8$
 $x = -\frac{4}{5}y + 8$
 $-\frac{4}{5}(x-8) = \frac{-5}{4}y$
 $\frac{-4}{5}x + \frac{32}{5}$
- 4) $\{x | x \geq 2\}$ State the domain of $f(x) = \sqrt{x-2} + 5$.

- 5) $\{f(x) | f(x) \geq 5\}$ State the range of $f(x) = \sqrt{x-2} + 5$.



8) $12|x^3|y^8$ Simplify: $\sqrt{144x^6y^{16}}$

9) x^7 Simplify: $\sqrt[5]{x^{35}}$

10) $14c^3d^4\sqrt{d}$ Simplify: $\sqrt{196c^6d^9}$

11) $\frac{\sqrt{105xy}}{15y^3}$ Simplify: $\frac{\sqrt{7x}}{\sqrt{15y^5}} = \frac{\sqrt{7x}}{y^2 \sqrt{15y}} \cdot \frac{\sqrt{15y}}{\sqrt{15y}} = \frac{\sqrt{105xy}}{15y^3}$

12) $\frac{\sqrt[4]{28b^2x^3}}{2|b|}$ Simplify: $\frac{\sqrt[4]{7x^3}}{\sqrt[4]{4b^2}} = \frac{\sqrt[4]{7x^3}}{\sqrt[4]{4b^2}} \cdot \frac{\sqrt[4]{4b^2}}{\sqrt[4]{4b^2}} = \frac{\sqrt[4]{28b^2x^3}}{\sqrt[4]{16b^4}}$

13) $\frac{4\sqrt{3} + 4\sqrt{2}}{4\sqrt{3} + 16\sqrt{2} - 12\sqrt{2}}$ Simplify: $\frac{2\sqrt{12} + 4\sqrt{32} - 2\sqrt{72}}{4\sqrt{3} + 16\sqrt{2} - 12\sqrt{2}}$

14) $\frac{-120}{21\sqrt{2}-58}$ Simplify: $(2\sqrt{15} - 6\sqrt{5})(2\sqrt{15} + 6\sqrt{5})$
 $4 \cdot 15 + 12\sqrt{15} - 12\sqrt{15} - 36 \cdot 5$

15) $\frac{9-2\sqrt{2}}{\sqrt{2}+6} \cdot \frac{\sqrt{2}-6}{\sqrt{2}-6} = \frac{9\sqrt{2}-54-4+12\sqrt{2}}{2-36} = \frac{21\sqrt{2}-58}{-34}$

16) $2\sqrt{3}$ or $2 \cdot 3^{1/2}$ Find the simplified form of $27^{1/2} + 3^{1/2} - 12^{1/2}$
 $3\sqrt{3} + \sqrt{3} - 2\sqrt{3} = 2\sqrt{3}$
 $3^{3/2} + 3^{1/2} - 2 \cdot 3^{1/2}$

17) $\frac{d^{2/5}}{d}$ Simplify: $d^{3/5} \cdot \frac{1}{d^{3/5}} \cdot \frac{d^{2/5}}{d^{2/5}} = \frac{d^{2/5}}{d^{5/5}} = \frac{d^{2/5}}{d}$

18) $\frac{g^3 - 2g^{5/2}}{g^{-4}}$ Simplify: $\frac{g^{5/2}}{g^{1/2} + 2} \cdot \frac{g^{1/2} - 2}{g^{1/2} - 2} = \frac{g^{1/2} - 2g^{5/2}}{g^{-4}} = \frac{g^3 - 2g^{5/2}}{g^{-4}}$

19) $\frac{2ab^2\sqrt{abx^2y^2}}{xy}$ Simplify: $\frac{\sqrt[3]{32a^4b^7}}{\sqrt[3]{2xy^2}} = \frac{\sqrt[3]{16a^4b^7}}{\sqrt[3]{xy^2}} \cdot \frac{\sqrt[3]{x^2y}}{\sqrt[3]{x^2y}} = \frac{\sqrt[3]{16a^4b^7x^2y}}{\sqrt[3]{x^3y^3}} = \frac{2ab^2\sqrt[3]{2abx^2y}}{xy}$

20) $\frac{253}{36}$ Solve: $(\sqrt{x+3})^2 = (6 - \sqrt{x+1})^2$
 $x+3 = 36 - 12\sqrt{x+1} + (x+1)$
 $x+3 = 37 - 12\sqrt{x+1} + x$
 $-34 = -12\sqrt{x+1}$
 $\frac{34}{12} = \sqrt{x+1}$
 $\frac{17}{6} = \sqrt{x+1}$
 $\frac{289}{36} = x+1$

21) $\frac{25}{4}$ Solve: $\sqrt{b-6} + \sqrt{b} = 3$

22) 82 Solve: $(3x+10)^{1/4} - 3 = 1$
 $((3x+10)^{1/4})^4 = (4)^4$
 $3x+10 = 256$

23) $-\frac{5}{2} \leq y \leq 2$ Solve: $\sqrt{2y+5} + 3 \leq 6$

24) Given the square root function: $f(x) = a\sqrt{x-h} + k$ explain in as much detail as possible what impact each of the parameters (a, h, & k) have on the graph of the function.