

Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Class: \_\_\_\_\_

Algebra  
 Unit 9  
 HW 9-6

1) Find  $f(2)$  if  $f(x) = 2x - 3\sqrt{2x}$

$$\begin{aligned} f(2) &= 2(2) - 3\sqrt{2 \cdot 2} \\ &= 2(2) - 3\sqrt{4} \\ &= 4 - 3 \cdot 2 \end{aligned} \rightarrow = 4 - 6$$

$f(2) = -2$

2) Find  $g(6)$  in simplest radical form:  $g(x) = 3\sqrt{12x} - \frac{2x}{4} + 4\sqrt[3]{36x}$

$$\begin{aligned} g(x) &= 3\sqrt{12 \cdot 6} - \frac{2(6)}{4} + 4\sqrt[3]{36 \cdot 6} \\ &= 3\sqrt{72} - \frac{12}{4} + 4\sqrt[3]{216} \\ &= 3\sqrt{36\sqrt{2}} - 3 + 4 \cdot 6 \\ &= 3 \cdot 6\sqrt{2} - 3 + 24 \end{aligned}$$

$= 18\sqrt{2} + 21$

3) Solve:  $7\sqrt{x} + 19 = 40 - 4\sqrt{x}$   
 $+4\sqrt{x} \quad -19 \quad -19 \quad +4\sqrt{x}$

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$$\frac{11\sqrt{x}}{11} = \frac{21}{11}$$

$x = \frac{441}{121}$

$$(\sqrt{x})^2 = \left(\frac{21}{11}\right)^2$$

4) Solve:  $16 - \sqrt{2x} = 34 - 4\sqrt{2x}$   
 $-16 \quad +4\sqrt{2x} \quad -16 \quad +4\sqrt{2x}$

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$$\frac{3\sqrt{2x}}{3} = \frac{18}{3} \quad (\sqrt{2x})^2 = (6)^2$$

$$\frac{2x}{2} = \frac{36}{2} \quad \boxed{x = 18}$$

5) Solve:  $2\sqrt{4x^2} - 62 = 8 - 3\sqrt{4x^2}$   
 $+3\sqrt{4x^2} \quad +62 \quad +62 \quad +3\sqrt{4x^2}$

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$$\frac{5\sqrt{4x^2}}{5} = \frac{70}{5}$$

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

$$\frac{4x^2}{4} = \frac{196}{4}$$

$x = \pm 7$

6) Solve:  $6\sqrt[3]{x} - 19 = 6\sqrt[3]{x} - 17$

$$\frac{-6\sqrt[3]{x} + 19}{-6\sqrt[3]{x} + 19}$$

$$\frac{5\sqrt[3]{x}}{5} = \frac{2}{5}$$

$$(\sqrt[3]{x})^5 = (4)^5$$

$$\boxed{x = 64}$$

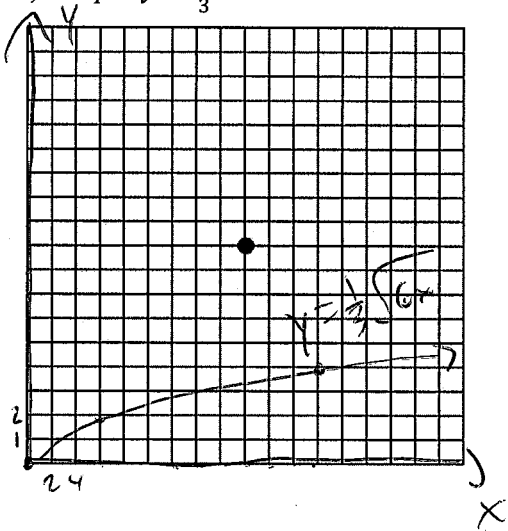
7) Simplify:  $16xy\sqrt{72000x^3y^5}$

$$16xy\sqrt{100 \cdot 36 \cdot 4 \cdot x^2 \cdot y^4 \cdot 5 \cdot x \cdot y}$$

$$16xy \cdot 10 \cdot 6 \cdot 4 \cdot x \cdot y^2 \sqrt{5xy}$$

$$\boxed{3840x^2y^3\sqrt{5xy}}$$

8) Graph:  $y = \frac{1}{3}\sqrt{6x}$



x	y
0	0
6	2
24	4