

March 27, 2015

$$g(x) = -\sqrt{-x+2} + 5$$

$-x+2 \geq 0$   $h=2; k=5$

$$\frac{-x}{-1} \geq \frac{-2}{-1}$$

$$x \leq 2$$

D:  $(-\infty, 2]$

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$$\frac{\sqrt[5]{96a^{12}b}}{\sqrt[5]{3a^2b^{-4}}} = \sqrt[5]{\frac{96a^{12}b}{3a^2b^{-4}}}$$

$$= \sqrt[5]{32a^{10}b^5}$$

$$= \boxed{2a^2b}$$

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$$\frac{\sqrt[6]{s}}{\sqrt[3]{s}} = \frac{s^{1/6}}{s^{1/3}} = s^{1/6 - 1/3} = s^{-1/6}$$

$$= \frac{1}{s^{1/6}} = \boxed{\frac{1}{\sqrt[6]{s}}}$$

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10.5 Rationalizing Denominator

#9)  $\frac{\sqrt{a}}{\sqrt{a}-\sqrt{b}} \cdot \frac{(\sqrt{a}+\sqrt{b})}{(\sqrt{a}+\sqrt{b})} = \boxed{\frac{a+\sqrt{ab}}{a-b}}$

Conjugate Pair  
FOIL

F:  $\sqrt{a} \cdot \sqrt{a} = \sqrt{a^2} = a$   
 O:  $\sqrt{a} \cdot \sqrt{b} = \sqrt{ab}$   
 I:  $-\sqrt{b} \cdot \sqrt{a} = -\sqrt{ab}$   
 L:  $-\sqrt{b} \cdot \sqrt{b} = -\sqrt{b^2} = -b$

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$$(49^{1/4} y^{3/4})^2$$

$$49^{2/4} \cdot y^{6/4}$$

$$49^{1/2} \cdot y^{3/2}$$

$$\sqrt{49} \cdot \sqrt{y^3}$$

$$7 \cdot y\sqrt{y}$$

$$\boxed{7y\sqrt{y}}$$

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$$\sqrt{a}(\sqrt{a} + \sqrt{b})$$

$$= \sqrt{a} \cdot \sqrt{a} + \sqrt{a} \cdot \sqrt{b}$$

$$= a + \sqrt{ab}$$

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$$\frac{(3\sqrt{2} + \sqrt{6})(4\sqrt{2} + \sqrt{6})}{(4\sqrt{2} - \sqrt{6})(4\sqrt{2} + \sqrt{6})}$$

Top

F:  $3\sqrt{2} \cdot 4\sqrt{2} = 3 \cdot 4 \cdot \sqrt{2} \cdot \sqrt{2} = 12 \cdot \sqrt{2^2} = 12 \cdot 2 = 24$

O:  $3\sqrt{2} \cdot \sqrt{6} = 3 \cdot 1 \cdot \sqrt{2} \cdot \sqrt{6} = 3\sqrt{12} = 3\sqrt{4 \cdot 3} = 3 \cdot 2 \cdot \sqrt{3} = 6\sqrt{3}$

I:  $\sqrt{6} \cdot 4\sqrt{2} = 1 \cdot 4 \cdot \sqrt{6} \cdot \sqrt{2} = 4 \cdot \sqrt{12} = 4 \cdot \sqrt{4 \cdot 3} = 4 \cdot 2 \cdot \sqrt{3} = 8\sqrt{3}$

L:  $\sqrt{6} \cdot \sqrt{6} = \sqrt{6^2} = \sqrt{36} = 6$

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Pattern

F:  $4\sqrt{2} \cdot 4\sqrt{2} = 4 \cdot 4 \cdot \sqrt{2} \cdot \sqrt{2} = 16 \cdot \sqrt{4} = 16 \cdot 2 = 32$

O:  $4\sqrt{2} \cdot \sqrt{6} = 4\sqrt{12} = 8\sqrt{3}$

I:  $-\sqrt{6} \cdot 4\sqrt{2} = -4\sqrt{12} = -8\sqrt{3}$

L:  $-\sqrt{6} \cdot \sqrt{6} = -\sqrt{36} = -6$

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$$\frac{24 + 6\sqrt{3} + 8\sqrt{3} + 6}{30 + 14\sqrt{3}}$$

$$\frac{30 + 14\sqrt{3}}{32 - 6}$$

$$\frac{2(15 + 7\sqrt{3})}{26}$$

$$\frac{15 + 7\sqrt{3}}{13}$$

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