

March 25, 2015
 * Quiz #7 - Friday
 * Exam #2 - Next Friday!

Mar 25-11:02 AM

10.2
 #19) $(5x^{1/4} - 4)(3x^{1/4} + 2)$

FOIL

F: $(5x^{1/4})(3x^{1/4}) = 15x^{1/2}$
 O: $(5x^{1/4})(2) = 10x^{1/4}$
 I: $(-4)(3x^{1/4}) = -12x^{1/4}$
 L: $(-4)(2) = -8$

$15x^{1/2} - 2x^{1/4} - 8$

Mar 25-11:04 AM

#18)

$\sqrt{a} \cdot \sqrt[4]{3b}$
 $a^{1/2} \cdot (3b)^{1/4}$
 $a^{2/4} \cdot (3b)^{1/4}$
 $\sqrt[4]{a^2} \cdot \sqrt[4]{3b}$
 $\sqrt[4]{a^2 3b}$

Mar 25-11:08 AM

#20)

$\frac{\sqrt[6]{x^5}}{\sqrt[3]{x^2}} = \frac{x^{5/6}}{x^{2/3}}$

Same Bases
 ↓
 Quotient Rule

$= x^{5/6 - 2/3} = x^{5/6 - 4/6} = x^{1/6}$
 $= \sqrt[6]{x}$

Mar 25-11:11 AM

#16)

$\sqrt[4]{(y-7)^2} = (y-7)^{2/4}$
 $= (y-7)^{1/2}$
 $= \sqrt{(y-7)}$

Mar 25-11:13 AM

9.3
 #5)

$\sqrt{\frac{3}{8}} = \frac{\sqrt{3}}{\sqrt{8}} = \frac{\sqrt{3}}{\sqrt{4 \cdot 2}} = \frac{\sqrt{3}}{2\sqrt{2}}$

$\frac{\sqrt{3}}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{3 \cdot 2}}{2\sqrt{2 \cdot 2}} = \frac{\sqrt{6}}{2\sqrt{4}} = \frac{\sqrt{6}}{2 \cdot 2} = \frac{\sqrt{6}}{4}$

we do not want radicals left in the denominator!
 * Rationalizing the Denominator

Mar 25-11:16 AM

$$\begin{aligned}
 (\sqrt{x})^2 &= \sqrt{x} \cdot \sqrt{x} \\
 &= \sqrt{x \cdot x} \\
 &= \sqrt{x^2} \\
 &= x
 \end{aligned}$$

*When we square a square root we get the radicand by itself.

Mar 25-11:28 AM

10.5
#1)

$$\begin{aligned}
 \frac{\sqrt{3}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} &= \frac{\sqrt{3 \cdot 7}}{\sqrt{7 \cdot 7}} \\
 &= \frac{\sqrt{21}}{\sqrt{49}} \\
 &= \frac{\sqrt{21}}{7}
 \end{aligned}$$

Mar 25-11:33 AM

$$\begin{aligned}
 \frac{2}{3 \cdot \sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} &= \frac{2 \sqrt{2}}{3 \cdot 2} = \frac{2 \sqrt{2}}{3 \cdot 2} \\
 &= \frac{\cancel{2} \sqrt{2}}{6} \\
 &= \frac{\sqrt{2}}{3}
 \end{aligned}$$

Mar 25-11:37 AM

$$\begin{aligned}
 \frac{2}{(3 + \sqrt{2})} \cdot \frac{(3 - \sqrt{2})}{(3 - \sqrt{2})} &= \frac{6 - 2\sqrt{2}}{9 - 3\sqrt{2} + 3\sqrt{2} - 2} \\
 &= \frac{6 - 2\sqrt{2}}{7}
 \end{aligned}$$

FOIL
Conjugate Pair

Mar 25-11:40 AM

$$\begin{aligned}
 4x^2 - 9 &= (2x + 3)(2x - 3) \\
 \text{Difference of Two Squares} &= 4x^2 - 6x + 6x - 9 \\
 &= 4x^2 - 9 \quad \text{I + 0 Cancel} \\
 &= (2x + 3)(2x - 3) \\
 &\text{Conjugate Pairs}
 \end{aligned}$$

Mar 25-11:22 AM

#6)

$$\begin{aligned}
 \frac{8}{1 - \sqrt{3}} \cdot \frac{1 + \sqrt{3}}{1 + \sqrt{3}} &= \frac{8 + 8\sqrt{3}}{1 - 3} = \frac{8 + 8\sqrt{3}}{-2} \\
 &= -\frac{8(1 + \sqrt{3})}{2} \\
 &= -4(1 + \sqrt{3}) \\
 &= -4 - 4\sqrt{3}
 \end{aligned}$$

Mar 25-11:51 AM

$$\begin{aligned} - \frac{8 + 8\sqrt{3}}{2} &= - \frac{8}{2} + \frac{8}{2} \sqrt{3} \\ &= -4 - 4\sqrt{3} \end{aligned}$$

Mar 25-11:53 AM