

$$\frac{-3x-1}{x^2+7x+12} + \frac{4x-4}{x^2+6x+8} = 0$$

LCD
 $= (x+2)(x+3)(x+4)$
 $\frac{A}{B} = \frac{C}{B} \Rightarrow A=C$
 $\frac{A}{B} = \frac{0}{B} \Rightarrow A=0$

$$x^2+4x+3x+12 \quad x^2+2x+4x+8$$

$$= x(x+4)+3(x+4) = x(x+2)+4(x+2)$$

$$= (x+4)(x+3) \quad = (x+2)(x+4)$$

$$\left(\frac{-3x-1}{(x+4)(x+3)} \right) \left(\frac{x+2}{x+2} \right) + \left(\frac{4x-4}{(x+2)(x+4)} \right) \left(\frac{x+3}{x+3} \right) = 0$$

$$\frac{-3x^2 - 6x - x - 2 + 4x^2 + 12x - 4x - 12}{LCD} = 0$$

$$\Rightarrow \frac{x^2 + x - 14}{LCD} = 0$$

$$\Rightarrow x^2 + x - 14 = 0$$

$$a=1, b=1, c=-14$$

$$b^2 - 4ac = 1^2 - 4(1)(-14)$$

$$= 1 + 56$$

$$= 57$$

$$x = \frac{-1 \pm \sqrt{57}}{2(1)} = \frac{-1 \pm \sqrt{57}}{2} \quad \text{is hard to check.}$$

See Basic Skills Quiz on Website

Bonus Assignment: Provide worked
Examples (Non-trivial)
of each problem.

Due Monday
4/23/12

S7.2 Rational Exponents.

Now, let us assume variables
are nonnegative.

$$a^{\frac{1}{n}} = \sqrt[n]{a}$$

$$\sqrt[n]{a^m} = (a^m)^{\frac{1}{n}}$$

$$= a^{\frac{m}{n}}$$

I did NOT allow
this for 7.1, 7.7, 8.1, 8.2

So $\sqrt[4]{x^4}$ was $|x|$

Now, if we assume $x \geq 0$
then $|x| = x$ and

$$\sqrt[4]{x^4} = x$$

$$\sqrt[4]{x^{16}} = x^{\frac{16}{4}} = x^4$$

$$\sqrt[4]{x^{17}} = x^{\frac{17}{4}} = x^{4 + \frac{1}{4}} = x^4 x^{\frac{1}{4}} = x^4 \sqrt[4]{x}$$

$$3^2 \cdot 3^7 = 3^9$$

$$x^a x^b = x^{a+b} \Rightarrow x^{a+b} = x^a x^b$$

$$\frac{17}{4} = 4 \frac{1}{4} = 4 + \frac{1}{4}$$

§ 7.2 #58

$$\frac{(m^2 n)^{-1/4}}{m^{-1/2} n^{5/8}}$$

(2)(1/4) = 1/2

$$= \frac{m^{1/2} n^{1/4}}{m^{-1/2} n^{5/8}} = \frac{m^{1/2+1/2}}{m^{5/8-1/4}} = \frac{m^1}{n^{3/8}} \quad \boxed{\frac{m^1}{n^{3/8}}}$$

Paper without lines is best for math.



$$\frac{a^b}{a^c} = a^{b-c} = \frac{1}{a^{c-b}}$$

$$\frac{5}{8} - \frac{1}{4} \cdot \frac{2}{2} = \frac{3}{8}$$

$$= \frac{m^{1/2} n^{1/4}}{m^{-1/2} n^{5/8}}$$

$$= m^{\frac{1}{2} - (-\frac{1}{2})} n^{\frac{1}{4} - \frac{5}{8}}$$

$$= m^{\frac{1}{2} + \frac{1}{2}} n^{-\frac{3}{8}}$$

$$= m^1 n^{-3/8} = \frac{m}{n^{3/8}}$$

$$82 \quad \sqrt[10]{a^5 b^5}$$

$$= a^{\frac{5}{10}} b^{\frac{5}{10}} = a^{\frac{1}{2}} b^{\frac{1}{2}} = (ab)^{\frac{1}{2}} = \sqrt{ab}$$

$$(90) \quad \sqrt[6]{y} \cdot \sqrt[3]{y} \cdot \sqrt[5]{y^2}$$

$$y^{\frac{1}{6}} y^{\frac{1}{3}} (y^2)^{\frac{1}{5}} = y^{\frac{1}{6}} y^{\frac{1}{3}} y^{\frac{2}{5}} = y^{\frac{2+4+8}{30}} = y^{\frac{14}{30}} = \sqrt[30]{y^{14}}$$

$$\frac{1}{2 \cdot 3} \cdot \frac{5}{5} + \frac{1}{3} \cdot \frac{2 \cdot 5}{2 \cdot 5} + \frac{1}{5} \cdot \frac{2 \cdot 3}{2 \cdot 3}$$

$$\frac{5 + 10 + 6}{30} = \frac{21}{30}$$

$$\begin{aligned} \text{LCD} &= \\ 2 \cdot 3 \cdot 5 &= \\ &= 30 \end{aligned}$$

$$\begin{aligned} \textcircled{62} \quad & x^{\frac{1}{2}} \left(x^{\frac{1}{2}} + x^{\frac{3}{2}} \right) \\ &= x^{\frac{1}{2}} x^{\frac{1}{2}} + x^{\frac{1}{2}} x^{\frac{3}{2}} \\ &= x^{\frac{1}{2} + \frac{1}{2}} + x^{\frac{1}{2} + \frac{3}{2}} \\ &= x + x^2 ! \end{aligned}$$

Next time: §7.3 & Quiz over last homework.

Today is last day to withdraw.