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6

Return Tests
Collect Ch 3 lab worksheet
Finish 6.1 (pp 74 - 75)
All of 6.2 (pp 76 - 79)
Start 6.3 (pp 80 - ?)

6.1

6.1.41 Multiply

$$\frac{a^3 + a^2b + a + b}{5a^3 + 5a} \cdot \frac{18a^2}{9a^2 - 9b^2}$$

$$\frac{\cancel{(a^2+1)}(a+b)}{5a\cancel{(a^2+1)}} \cdot \frac{(2)\cancel{(3)}\cancel{(3)}(a)(a)}{\cancel{(3)}\cancel{(3)}(a+b)(a-b)}$$

$$\frac{a+b}{(5)(a)} \cdot \frac{(2)(a)(a)}{(a+b)(a-b)}$$

$$\frac{\cancel{(a+b)}(2)(a)\cancel{(a)}}{(5)\cancel{(a)}\cancel{(a+b)}(a-b)}$$

$$\frac{2a}{5(a-b)}$$ //

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6.1

6.1, #11 Multiply

$$\frac{a^3 + a^2b + a + b}{5a^3 + 5a} \cdot \frac{18a^2}{9a^2 - 9b^2}$$

$$\frac{(a^2+1)(a+b)}{5a(a^2+1)} \cdot \frac{(2)(3)(3)(a)(a)}{(3)(3)(a+b)(a-b)}$$

$$\frac{a+b}{(5)(a)} \cdot \frac{(2)(a)(a)}{(a+b)(a-b)}$$

$$\frac{(a+b)(2)(a)(a)}{(5)(a)(a+b)(a-b)}$$

$$\frac{2a}{5(a-b)}$$ #11

6.1.65

$$\frac{7x^2-13x-2}{y^2+2y-3}\cdot\frac{y^2+4y-5}{28x^2+11x+1}\div\frac{5x^2-9x-2}{8x^2-2x-1}$$

$$\frac{(7x+1)(x-2)}{(y+3)(y-1)}\cdot\frac{(y+5)(y-1)}{(7x+1)(4x+1)}\div\frac{(5x+1)(x-2)}{(4x+1)(2x-1)}$$

$$\frac{(x-2)(y+5)}{(y+3)(4x+1)}\cdot\frac{(4x+1)(2x-1)}{(5x+1)(x-2)}$$

$$\frac{(y+5)(2x-1)}{(y+3)(5x+1)}$$

Factored Form

6.1.71

$$f(x)=\frac{x+12}{2x-1}$$

Find $f(x)=\frac{x+12}{2x-1}$

$$f(4)=\frac{(4)+12}{2(4)-1}=\frac{16}{7}$$

$$f(0)=\frac{(0)+12}{2(0)-1}=\frac{12}{-1}=-12$$

$$f(-1)=\frac{(-1)+12}{2(-1)-1}=\frac{11}{-3}=-\frac{11}{3}$$

6.2

6.2.9

$$\frac{x^2+x}{x+5} - \frac{25+x}{x+5}$$

"like"

$$\frac{P}{Q} - \frac{R}{Q}$$

$$= \frac{P-(R)}{Q}$$

$$\frac{x^2+x-(25+x)}{x+5} \rightarrow \frac{x^2+x-25-x}{x+5}$$

$$\rightarrow \frac{x^2-25}{x+5} \rightarrow \frac{(x+5)(x-5)}{x+5}$$

$$\rightarrow x-5 \quad \text{II}$$

6.2.23 Find the LCD of ...

~~$\frac{c}{c^2-d^2}$ and $\frac{1}{c^2-2cd}$~~

$$\frac{c}{c^2-d^2} \text{ and } \frac{1}{c^2-2cd+d^2}$$

$$\frac{c}{(c+d)(c-d)} \text{ and } \frac{1}{(c-d)(c-d)}$$

$\frac{(c-d)\quad c}{(c-d)(c-d)(c+d)}$ and $\frac{1\quad (c+d)}{(c-d)(c-d)(c+d)}$

LCD $= (c-d)(c-d)(c+d)$

$= (c-d)^2(c+d)$ //

6.2 17 Find LCD of...

$\frac{3}{x}$ and $\frac{2}{x-7}$

$\frac{(x-7)(3)}{(x)(x-7)}$ and $\frac{(2)(x)}{(x-7)(x)}$

LCD $= x(x-7)$ //

6.2.55 add

$\frac{3}{2x-10} + \frac{4}{3x-15}$

$\frac{3}{2(x-5)} + \frac{4}{3(x-5)}$

$\frac{(3)\,3}{(3)\,2(x-5)} + \frac{4(2)}{3(x-5)(2)}$

$$\frac{9}{(2)(3)(x-5)} + \frac{8}{(2)(3)(x-5)}$$

$$\frac{17}{(2)(3)(x-5)} \rightarrow \frac{17}{6(x-5)}$$

Numer	Denom
multiply, distr. butc. Combine like Terms.	Factor and leave factored.
adding / Subtracting	

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6.2.79

$$\left(\frac{x}{(x+3)(x-3)}\frac{(x-3)}{} - \frac{x}{(x-3)}\frac{(x+3)}{(x+3)}\right) \div \frac{x}{3x+9}$$

$$\frac{x(x-3) - x(x+3)}{(x+3)(x-3)}$$

$$\frac{x^2 - 3x - x^2 - 3x}{(x+3)(x-3)} = \frac{-6x}{(x+3)(x-3)}$$

$$\frac{-6x}{(x+3)(x-3)} \div \frac{x}{3x+9}$$

$$\frac{(-1)(2)(3)(x)}{(x+3)(x-3)} \cdot \frac{(3)(x+3)}{(x)}$$

$$\frac{-18}{x-3}$$ 11

6.3 6.3.33

$$\left(\frac{4}{x+2} + \frac{6}{x+5}\right) \div \frac{5x+16}{x^2+7x+10}$$

$$\frac{\frac{4}{x+2} + \frac{6}{x+5}}{\frac{5x+16}{x^2+7x+10}}$$ (vertical)