

August 25, 2017  
 \* Add/Drop

Aug 25-10:58 AM

#14) 
$$\frac{x^4 (x^{-8})^{-9}}{(x^{-2})^{-3}} = \frac{x^4 \cdot x^{72}}{x^6}$$

$$= \frac{x^{76}}{x^6}$$

$$= x^{76-6} = x^{70}$$

$$= \boxed{x^{70}}$$

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#5) 
$$\frac{5(y-4)}{3} = 2y - 2$$
 \* Clear fractions in equations by distributing an LCD.  

$$5(y-4) = 3(2y-2)$$

$$5y - 20 = 6y - 6$$

$$\begin{array}{r} -5y + 6 \\ \hline -14 = y \end{array}$$
 Ok  

$$\frac{5(-14-4)}{3} = 2(-14) - 2$$

$$\frac{5(-18)}{3} = -28 - 2$$

$$\frac{-90}{3} = -30$$

$$-30 = -30 \checkmark$$

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#10) Factor sum of two cubes  

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$t^3 + 64$$

$$\begin{array}{l} a = t \\ b = 4 \end{array} = (t+4)(t^2 - 4t + 16)$$

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Difference of Two Square  
 (only)  

$$a^2 - b^2 = (a+b)(a-b)$$
 #17) 
$$81 - 49x^2$$

$$\begin{array}{l} a = 9 \\ b = 7x \end{array} (9+7x)(9-7x)$$

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#15) 
$$\frac{x^2 + 11x + 15}{x+3}$$

	$x^2$	$11x$	$+15$
$x+3$	$x^2$	$+3x$	$+15$
	$8x$	$+15$	
$\frac{x^2}{x} = x$	$8x$	$+24$	
	$0$	$-9$	← remainder

 Ok 
$$\text{ans. } x+8 - \frac{9}{x+3}$$

$$\frac{[(x+3)(x+8)] - 9}{x+3}$$

$$\frac{[x^2 + 8x + 3x + 24] - 9}{x+3}$$

$$\frac{x^2 + 11x + 15}{x+3}$$

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