H/W 6.6 Review 10/15/2012

#31 CONT.

$150x = 22500 + 150x$

$-150x \quad -150x$

$\frac{450x}{450} = \frac{22500}{450}$

$x = \frac{22500}{450} = 50$

#33 $D = R \cdot T$

	Dist	Rate
upstream	10	$x-5$
downstream	20	$x+5$

lcd: $(x+5)(x-5)$ $\quad \frac{10}{x-5} = \frac{20}{x+5}$

$\frac{D}{R} = T$ $\quad$ up: $\frac{10}{x-5}$ $\quad$ down: $\frac{20}{x+5}$

$10(x+5) = 20(x-5)$

$10x+50 = 20-100$

$\frac{150}{10} = \frac{10x}{10}$

$15 = x$

Section 6.4 LONG + SYNTHETIC DIVISION

(ex) $25\overline{)7856}$ $\quad 314$ R.6

75

35

25

106

100

6

Ans: $314\frac{6}{25}$

(ex.) $x+2 \overline{)x^2 - 7x + 3}$ $\quad x - 9 + \frac{21}{x+2}$

$\ominus x^2 \oplus 2x$

$-9x + 3$

$\oplus -9x \oplus -18$

21

Ex $\dfrac{x^2 - x^3 + 3}{x+1}$

$$x+1 \overline{)\, x^2 - x^3 + 3}$$

x

x^2

OR

Write in Descending Order

$$\frac{-x^3 + x^2 + 0x + 3}{x+1}$$

$$x+1 \overline{)\, -x^3 + x^2 + 0x + 3}$$

$-x^2 + 2x - 2 + \frac{5}{x+1}$

$\oplus x^3 \ominus x^2$

$2x^2 + 0x$

$\ominus 2x^2 \oplus 2x$

$-2x + 3$

$\oplus 2x \ominus 2$

5

① Rearrange in descending order

Ex ② $\dfrac{x^3 - 1}{x^2 + 1} = \dfrac{x^3 + 0x^2 + 0x - 1}{1x^2 + 0x + 1}$

$$x^2 + 0x + 1 \overline{)\, x^3 + 0x^2 + 0x - 1}$$

$x + \frac{-x-1}{x^2+1}$

$\ominus x^3 \ominus 0x^2 \ominus x$

$-1x - 1$

SYNTHETIC DIVISION - LINEAR DIVISORS ONLY!

$\underline{\quad}$

$x +$

ex. $\dfrac{-x^3 + x^2 + 0x + 3}{x+1}$

$x + 1 = 0$

$x = -1$

-1 | -1 | 1 | 0 | 3

$\downarrow$ $\downarrow$ -2

-1 | 1 | -2 | 5

x^2 x # R

Ans $x^2 + x - 2 + \dfrac{5}{x+1}$

6.7

10/15/2012 CONT.

Ex. 4 $x^4 - 0x^3 - 3x^2 + x - 1$

$$\frac{x^4 - 3x^2 + x - 1}{x - 2}$$

$x - 2 = 0$

$x = 2$

$$2 \;\big|\; 1 \quad 0 \quad -3 \quad 1 \quad -1$$
$$\downarrow \quad 2 \quad 4 \quad 2 \quad 6$$
$$1 \quad 2 \quad 1 \quad 3 \quad 5$$
$$x^3 \quad x^2 \quad x \quad \# \quad R$$

ANS $\boxed{x^3 + 2x^2 + x + 3 + \frac{5}{x-2}}$

October 17, 2012 TEST REVIEW

6.1

Ex $\frac{3}{x-2}$

$x - 2 \neq 0$

$x \neq 2$

$\{x \mid x \in \mathbb{R} \text{ and } x \neq 2\}$

or

x is a real # and $x \neq 2$

6.4 Ex $\frac{3x^2yz - 6x^4y^2 + 12x^5y^2z^3}{3xyz}$

$$\frac{3x^2y^2}{3xyz} - \frac{6x^4y^2}{3xyz} + \frac{12x^5y^2z^3}{3xyz}$$

$$x - \frac{2x^3y}{z} + 4x^4yz^2$$