Nov. 27 6.10 Dividing a Polynomial By a Binomial

Long Division

Divisor (D): 2

Quotient (Q): 339

Dividend (P): 679

$$
\begin{array}{r}
339 \\
2\overline{)679} \\
-6\downarrow \\
\hline
07 \\
-06 \\
\hline
19 \\
18 \\
\hline
1
\end{array}
$$

(R) 1 Remainder

$P = DQ + R$

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Divide $(5x^2 + 3x + 6)$ by $(x+1)$

*Hint: Our dividend must have the terms in order from highest to lowest exponent.

$$
\begin{array}{r}
5x - 2 \\
x+1\overline{)5x^2 + 3x + 6} \\
-(5x^2 + 5x)\quad\downarrow \\
\hline
-2x + 6 \\
-(-2x - 2) \\
\hline
8
\end{array}
$$

$P = DQ + R$

$= (x+1)(5x-2) + 8$

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$(3x^3 + 9x - x^2 + 2) \div (3x - 1)$

$1x^2 + 3$

$3x - 1 \overline{)\ 3x^3 - 1x^2 + 9x + 2}$

$-\ 3x^3 - 1x^2$

$0 + 9x + 2$

$9x - 3$

5

$(3x-1)(1x^2+3)+5$

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$(9x^4 + 2x^2 + 2x + 2) \div (3x - 1)$

Hint: If your dividend is missing a term you MUST fill that term in with 0.

$3x^3 + 1x^2 + x + 1$

$3x - 1 \overline{)\ 9x^4 + 0x^3 + 2x^2 + 2x + 2}$

$9x^4 - 3x^3$

$+3x^3 + 2x^2$

$-\ 3x^3 - 1x^2$

$-\ 3x^2 + 2x$

$3x^2 - 1x$

$3x + 2$

$3x - 1$

3

$(3x-1)(3x^3+1x^2+x+1)+3$

Pg. 390
4, 6, 8 odds
12, 17 odds

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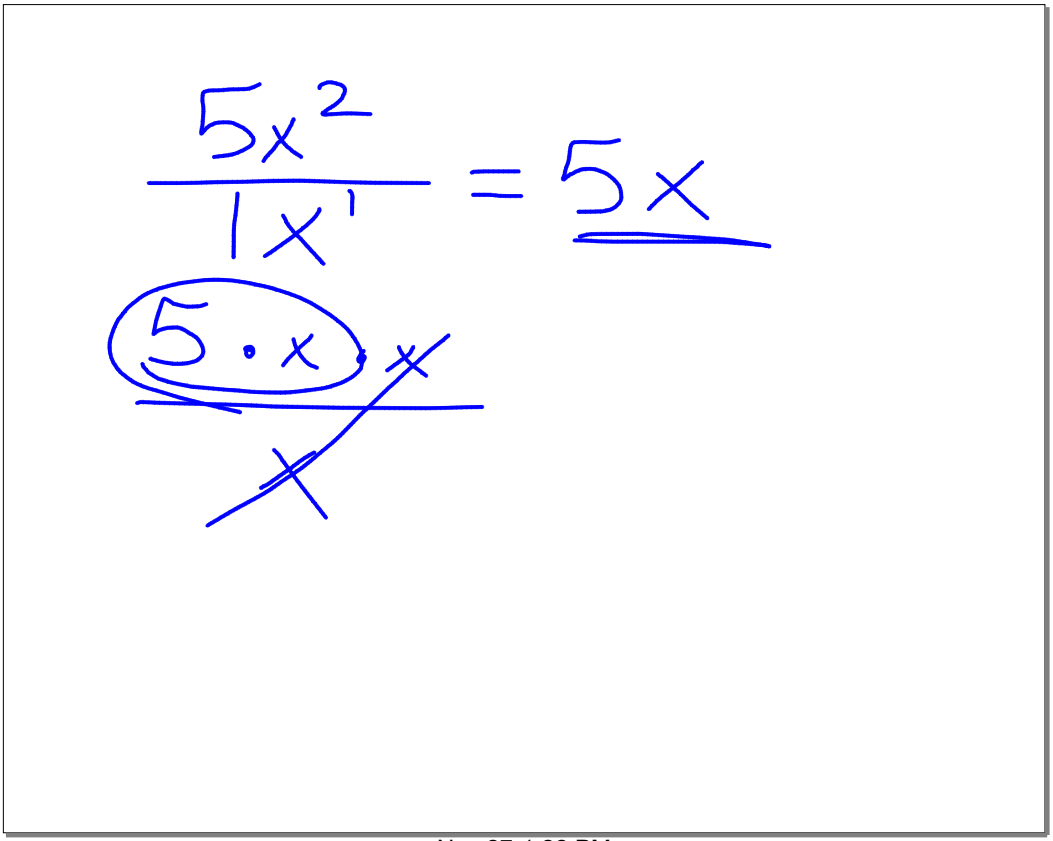

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