

Bellwork Alg 2A Thursday, April 27, 2017

Find each quotient using Polynomial Long Division. Leave the remainder any way you wish.

1. $\frac{4x^3 - 8x^2 + x - 19}{x + 2}$

2. $\frac{6x^3 + 8x^2 - 9x - 35}{3x - 5}$

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

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ANSWERS

Find each quotient using Polynomial Long Division. Leave the remainder any way you wish.

1. $\frac{4x^3 - 8x^2 + x - 19}{x + 2} = 4x^2 - 16x + 33$
 $R = -85$

$$\begin{array}{r} x+2 \overline{) 4x^3 - 8x^2 + x - 19} \\ \underline{4x^3 + 8x^2} \\ -16x^2 + x \\ \underline{-16x^2 - 32x} \\ 33x - 19 \\ \underline{33x + 66} \\ -85 \end{array}$$

2. $\frac{6x^3 + 8x^2 - 9x - 35}{3x - 5} = 2x^2 + 6x + 7$

$$\begin{array}{r} 3x-5 \overline{) 6x^3 + 8x^2 - 9x - 35} \\ \underline{6x^3 - 10x^2} \\ 18x^2 - 9x \\ \underline{18x^2 - 30x} \\ 21x - 35 \\ \underline{21x - 35} \\ 0 \end{array}$$

3. $\frac{2x^4 - x^2 + 3x + 10}{x - 4} \rightarrow$ missing term so replace with $0x^3$ when doing division

$$\begin{array}{r} x-4 \overline{) 2x^4 + 0x^3 - x^2 + 3x + 10} \\ \underline{2x^4 - 8x^3} \\ 8x^3 - x^2 \\ \underline{8x^3 - 32x^2} \\ 31x^2 + 3x \\ \underline{31x^2 - 124x} \\ 127x + 10 \\ \underline{127x - 508} \\ 518 \end{array}$$

$2x^3 + 8x^2 + 31x + 127$
 $R = 518$