



Questions?  
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Find quotient and remainder of dividing  $15x^5 + 20x^3 + 6x^2 + 5x + 10$  by  $3x^2 + 4$ .

Question

Answer

$$\begin{array}{r}
 5x^3 + 2 \\
 3x^2 + 4 \overline{) 15x^5 + 20x^3 + 6x^2 + 5x + 10} \\
 \underline{15x^5 + 20x^3} \phantom{+ 6x^2 + 5x + 10} \\
 6x^2 + 5x + 10 \\
 \underline{6x^2} \phantom{+ 5x + 10} + 8 \\
 5x + 2
 \end{array}$$

Quotient =  $5x^3 + 2$   
 Remainder =  $5x + 2$

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Find quotient and remainder of dividing  $3x^4 + 4x^3 + 12x^2 + 12x + 14$  by  $x^2 + 3$ .

Question

Answer

$$\begin{array}{r}
 3x^2 + 4x + 3 \\
 x^2 + 3 \overline{) 3x^4 + 4x^3 + 12x^2 + 12x + 14} \\
 \underline{-3x^4} \qquad \qquad \qquad + 9x^2 \\
 4x^3 + 3x^2 + 12x + 14 \\
 \underline{-4x^3} \qquad \qquad \qquad + 12x \\
 3x^2 \qquad \qquad \qquad + 14 \\
 \underline{-3x^2} \qquad \qquad \qquad + 9 \\
 5
 \end{array}$$

Quotient =  $3x^2 + 4x + 3$   
 Remainder = 5

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## Problem 3 of 6

Find quotient and remainder of dividing  $4x^4 + 3x^2 + 12x + 11$  by  $4x + 3$ .

Question

Answer

$$\begin{array}{r}
 x^3 - \frac{3x^2}{4} + \frac{21x}{16} + \frac{129}{64} \\
 4x + 3 \overline{) 4x^4 \phantom{+ 3x^3} + 3x^2 + 12x + 11} \\
 \underline{4x^4 + 3x^3} \phantom{+ 12x + 11} \\
 -3x^3 + 3x^2 + 12x + 11 \\
 \underline{-3x^3 - \frac{9x^2}{4}} \phantom{+ 12x + 11} \\
 + \phantom{-} \frac{21x^2}{4} + 12x + 11 \\
 \underline{\phantom{+} \frac{21x^2}{4} + \frac{63x}{16}} \phantom{+ 11} \\
 \phantom{+} \frac{129x}{16} + 11 \\
 \underline{\phantom{+} \frac{129x}{16} + \frac{387}{64}} \\
 \phantom{+} \frac{317}{64}
 \end{array}$$

$$\begin{array}{l}
 \text{Quotient} = x^3 - \frac{3x^2}{4} + \frac{21x}{16} + \frac{129}{64} \\
 \text{Remainder} = \frac{317}{64}
 \end{array}$$

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Find quotient and remainder of dividing  $4x^4 + 15x^2 - 1$  by  $3 + 4x^2$ .

Question

$$\begin{array}{r}
 x^2 + 3 \\
 4x^2 + 3 \overline{) 4x^4 + 15x^2 - 1} \\
 \underline{4x^4 + 3x^2} \phantom{- 1} \\
 12x^2 - 1 \\
 \underline{12x^2 + 9} \\
 -10
 \end{array}$$

Answer

Quotient =  $x^2 + 3$   
Remainder =  $-10$

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Find quotient and remainder of dividing  
 $2x^4 + 11x^3 + 33x^2 + 77x + 105$  by  $x^2 + 5x + 7$ .

Question

Answer

$$\begin{array}{r}
 2x^2 + x + 14 \\
 x^2 + 5x + 7 \overline{) 2x^4 + 11x^3 + 33x^2 + 77x + 105} \\
 \underline{2x^4 + 10x^3 + 14x^2} \phantom{+ 77x + 105} \\
 x^3 + 19x^2 + 77x + 105 \\
 \underline{x^3 + 5x^2 + 7x} \phantom{+ 105} \\
 14x^2 + 70x + 105 \\
 \underline{14x^2 + 70x + 98} \\
 7
 \end{array}$$

Quotient =  $2x^2 + x + 14$   
 Remainder = 7

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Questions?  
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Ask Question

Find quotient and remainder of dividing  $x^3 + 14x^2 + 7x + 103$  by  $14 + x$ .

Question

$$\begin{array}{r}
 x^2 + 7 \\
 x + 14 \overline{) x^3 + 14x^2 + 7x + 103} \\
 \underline{x^3 + 14x^2} \phantom{+ 7x + 103} \\
 7x + 103 \\
 \underline{7x + 98} \\
 5
 \end{array}$$

Answer

Quotient =  $x^2 + 7$   
Remainder = 5

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