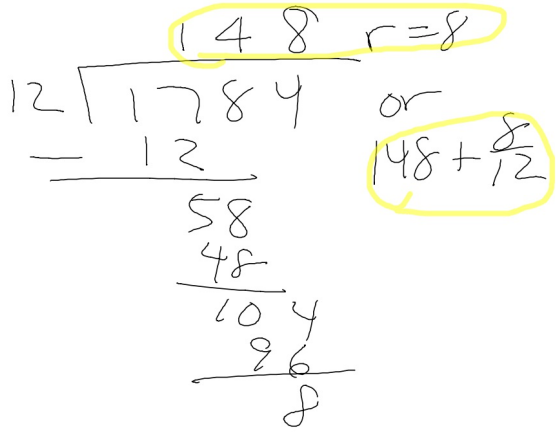
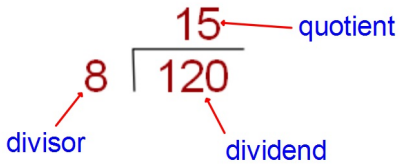
Do the following using long division without a calculator. Give any remainder as a fraction

$\frac{1784}{12} =$

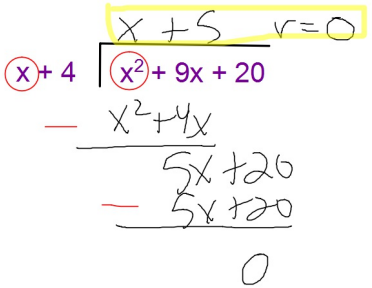




Sec 6-3: Dividing Polynomials

Polynomial Long Division:

$x + 4 \overline{)\ x^2 + 9x + 20}$



$x^2 + 11x + 20$ r = 66 or $+\frac{66}{x-3}$

$x - 3 \;\big|\; x^3 + 8x^2 - 13x + 6$

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

$11x^2 - 13x$

$-(11x^2 - 33x)$

$20x + 6$

$-(20x - 60)$

66

Find this quotient. Give any remainder as a fraction.

$$\frac{4x^2 + 18x - 31}{2x + 5} =$$

$2x + 4$ r = -51 or $-\frac{51}{2x+5}$

$2x+5 \;\big|\; 4x^2 + 18x - 31$

$-(4x^2 + 10x)$

$8x - 31$

$-(8x + 20)$

-51

Find this quotient: $\frac{3x^4 + x^3 + x^2 + 2x - 10}{x^2 + 2}$ =

$3x^2 + x - 5$ r = 0

$x^2 + 2 \;\big|\; 3x^4 + x^3 + x^2 + 2x - 10$

$-(3x^4 + 0x^3 + 6x^2)$

$x^3 - 5x^2 + 2x$

$-(x^3 + 0x^2 + 2x)$

$-5x^2 + 0$

$-(-5x^2 - 10)$

0

Find this quotient: $\frac{4x^3 + 7x - 9}{x + 3}$

$4x^2 - 12x + 43$ r = -138 or $-\frac{138}{x+3}$

$x+3 \;\big|\; 4x^3 + 0x^2 + 7x - 9$

$-(4x^3 + 12x^2)$

$-12x^2 + 7x$

$-(-12x^2 - 36x)$

$43x - 9$

$-(43x + 129)$

-138