Dividing Polynomials

$$294^{R9}$$
$$12\overline{)3,537}$$
$$-24$$
$$113$$
$$-108$$
$$57$$
$$-48$$
$$9$$

$$(6x^2+7x+2)\div(2x+1)$$

$$3x+2 \leftarrow \text{Quotient}$$
$$2x+1\overline{)6x^2+7x+2} \leftarrow \text{dividend}$$
$$\uparrow \text{divisor}$$
$$-(6x^2+3x)$$
$$4x+2$$
$$-(4x+2)$$
$$0$$

$$x^2-2x-8 \; R\frac{-3}{x+3}$$
$$x+3\overline{)x^3+x^2-14x-27}$$
$$-(x^3+3x^2)$$
$$-2x^2-14x-27$$
$$-(-2x^2+6x)$$
$$-8x-27$$
$$-(-8x+24)$$
$$-3$$

Steps

1) Make sure Polynomial is in Standard Form

2) The polynomial with the Largest power goes on the inside

3) Divide the first Term of the dividend by the first term of the divisor. and Place on top.

4) Multiply whats up top by the divisor and place under the dividend

5) Subtract and bring down the next term.

6) Repeat 2, 3, 4

7) Write final answer with Remainder if necessary.