Spiral - Polynomial review

Simplify each expression.

1) $5r + 5r^2 + 5 + 6 + 3r - 8r^2$

2) $\left(-8x^2 - 8x^3\right) - \left(7x^4 - 3x^2 - 8x + 3x^3\right)$
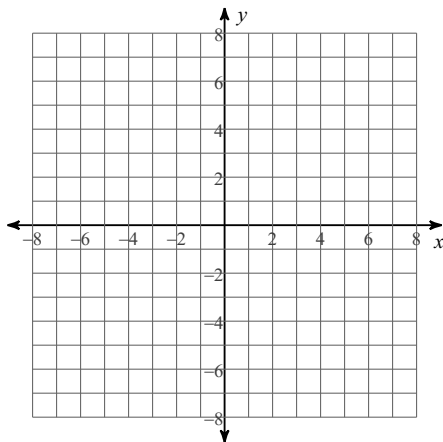
3) $\left(-8x^2 - 2\right)\left(-8x^2 + 2\right)$

Change to standard form.
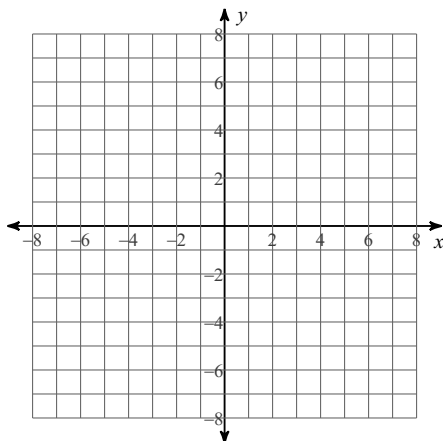
4) $-6n^2 - n^3 + 8n + 9$

Sketch the graph of each function. Find the x-intercepts and the relative maximums.

5) $f(x) = x^3 - 4x^2 + 3$

Sketch the graph of each function. Find the x-intercepts and the relative minimums.

6) $f(x) = x^2 + 4x - 1$

State the possible x-intercepts for the function.

7) $f(x) = (x + 5)(x + 4)$

State the x-intercepts for the function. One factor is given.

8) $y = 3x^3 - 8x^2 - 13x + 30; \ x + 2$