

Long Division:

A.  $2\sqrt{782}$

B.  $4\sqrt{8764}$

C.  $3\sqrt{3341}$

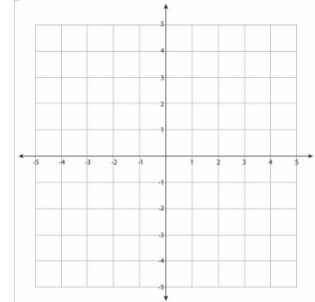
Factor

1. a.  $f(x) = x^2 + 7x + 12$

Divide

b.  $x+3 \overline{\sqrt{x^2 + 7x + 12}}$

Graph



c.  $f(x) = x^2 + 7x + 12$  using Quad. Formula:  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

2. Factor:  $x^2+5x+4$

3. Divide:  $x+1 \overline{\sqrt{x^2 + 5x + 4}}$

**Long Division Polynomials:**

You are given a polynomial;  $f(x) = qx^n + ax^{n-1} \dots + bx + p$ . Find all the factors of the constant (p). Find all the factors of your leading coefficient (q). All of the possible zeros are  $\pm \frac{p}{q}$ .

4.

$x+1 \overline{\sqrt{x^3 + 2x^2 - 5x - 6}}$

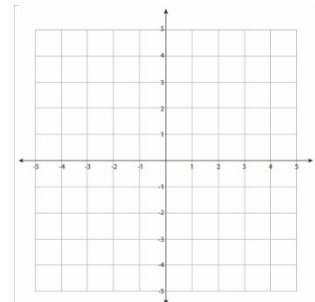
5.

$x+3 \overline{\sqrt{x^3 - 27x - 54}}$

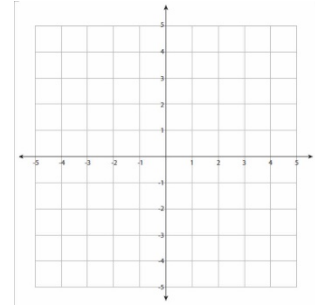
6.

$x+4 \overline{\sqrt{2x^3 + 11x^2 + 7x - 20}}$

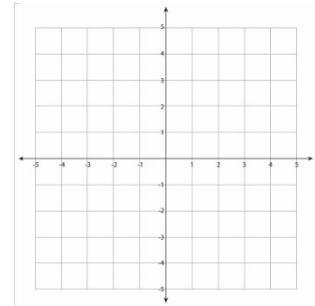
7.  $f(x) = 3x^3 + 12x^2 + 12x$



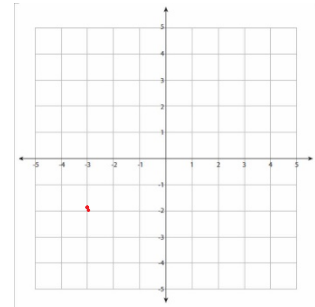
8.  $f(x) = x^3 + x^2 - 9x - 9; (x+3)$



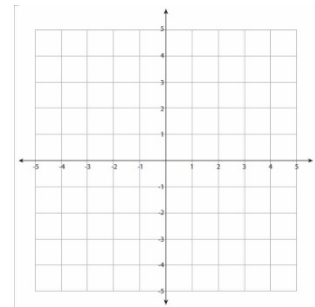
9.  $f(x) = x^3 + x^2 - 14x - 24; (x+3)$



10.  $f(x) = x^3 - 7x - 6; (x+2)$



11.  $f(x) = x^3 - 5x^2 - 16x + 80; (x-4)$



12.  $f(x) = x^3 - 2x^2 - 19x + 20; (x-1)$

