College Algebra	Name:
Study Guide 14 EC	**Class:**
Due Date:	**Score:**

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

Visit the website www.wolframalpha.com, and then type in your equation in that box as displayed below.
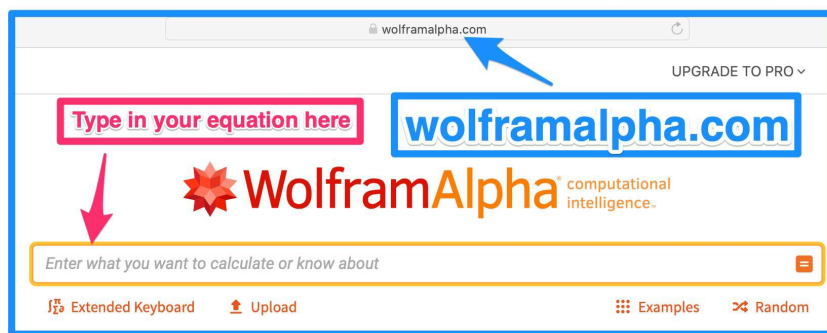
Use the website above to solve the following questions.

1. **Consider** $p(x) = x^3 + 2x^2 - 16x - 32,$

   (a) **(2 points) Factor** $p(x)$ **completely.**

   (a) —————

   (b) **(2 points) Find all** x**-intercepts.**

   (b) —————

   (c) **(2 points) Find its** y**-intercept.**
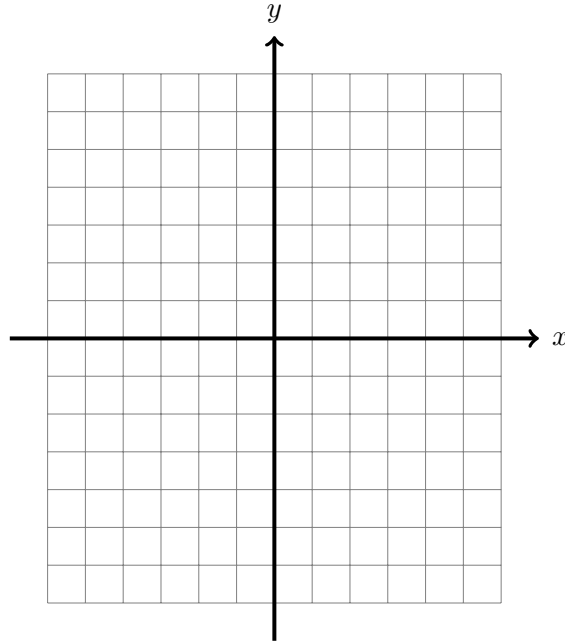
   (c) —————

   (d) **(2 points) Find a reasonable upper bound. Use synthetic division to support your answer.**

   (d) —————

(e) **(2 points)** Find a reasonable lower bound. Use synthetic division to support your answer.

(e) _____

(f) **(4 points)** Graph $p(x)$. Clearly mark all intercepts.

2. **Consider** $p(x) = 2x^4 + 3x^3 - 7x^2 + 3x - 9,$

    (a) **(2 points)** Factor $p(x)$ completely.

(a) _____

    (b) **(2 points)** Find all x-intercepts.

(b) _____

    (c) **(2 points)** Find its y-intercept.
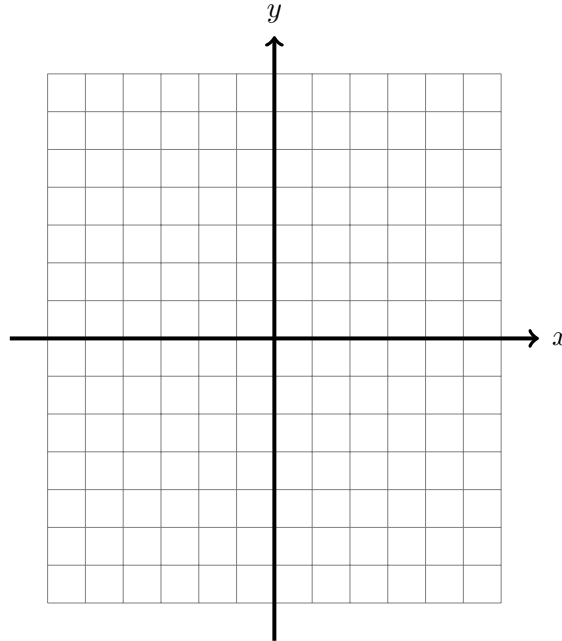
(c) _____

    (d) **(2 points)** Find a reasonable upper bound. Use synthetic division to support your answer.

(d) _____

(e) **(2 points)** Find a reasonable lower bound. Use synthetic division to support your answer.

(e) _____

(f) **(4 points)** Graph $p(x)$. Clearly mark all intercepts.

3. Consider $f(x) = \dfrac{x^2 - 4}{x^2 - 1}$,

   (a) **(2 points)** Write $f(x)$ in factored form.

(a) _____

   (b) **(2 points)** Find its domain in interval notation.
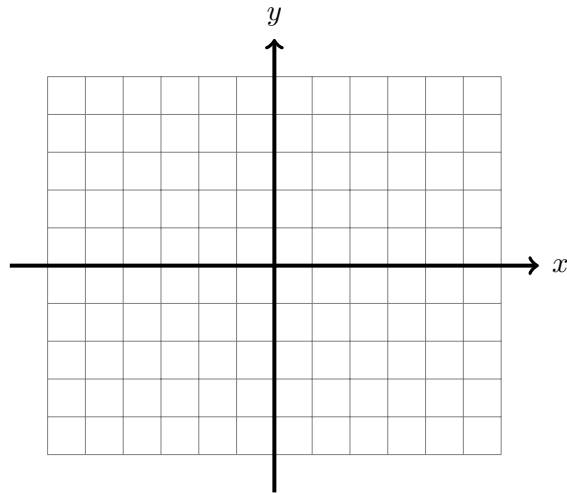
(b) _____

   (c) **(2 points)** Find all x-intercepts.

(c) _____

   (d) **(2 points)** Find its y-intercept.

(d) _____

(e) **(4 points)** Graph $f(x)$. Clearly mark all intercepts.

---

4. **Consider** $f(x) = \dfrac{4}{x^2 + 1}$,

   (a) **(2 points)** Find its domain in interval notation.

   (a) _____

   (b) **(2 points)** Find all x-intercepts.

   (b) _____

   (c) **(2 points)** Find its y-intercept.

   (c) _____

   (d) **(4 points)** Graph $f(x)$. Clearly mark all intercepts.