**1-3 Practice**

***Continuity, End Behavior, and Limits***

**Determine whether each function is continuous at the given *x*-value(s). Justify using the continuity test. If discontinuous, identify the type of discontinuity as *infinite*, *jump*, or *removable*.**

**1.** *f*(*x*) = $-\frac{2}{3x^{2}}$; at *x* = –1 **2.** *f*(*x*) = $\frac{x -2}{x + 4}$; at *x* = –4

**3.** *f*(*x*) = $x^{3}$ – 2*x* + 2; at *x* = 1 **4.** *f*(*x*) = $\frac{x + 1}{x^{2} + 3x + 2}$; at *x* = –1 and *x* = –2

**Determine between which consecutive integers the real zeros of each function are located on the given interval.**

**5.** *f*(*x*) = $x^{3}$ + 5$x^{2}$ – 4; [–6, 2] **6.** *g*(*x*) = $x^{4}$ + 10*x* – 6; [–3, 2]

**Use the graph of each function to describe its end behavior. Support the conjecture numerically.**

**7.**

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**8.**

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**9. ELECTRONICS** Ohm’s Law gives the relationship between resistance *R*, voltage *E*, and current

*I* in a circuit as *R* = $\frac{E}{I}$ . If the voltage remains constant but the current keeps increasing in the circuit, what happens to the resistance?