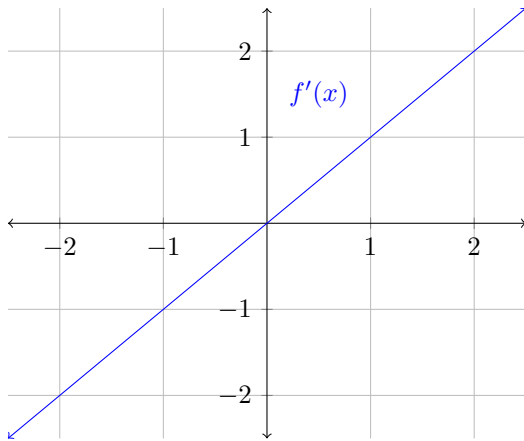


# MA 16010 LESSON 17: GRAPHICAL INTERPRETATION OF DERIVATIVES

So far, we have learned that:

	<b>1. Critical Number:</b>	
	<b>2. Increasing:</b>	
	<b>3. Decreasing:</b>	
	<b>4. Relative Max:</b>	
	<b>5. Relative Min:</b>	
	<b>6. Concave Up:</b>	
	<b>7. Concave Down:</b>	
	<b>8. Inflection Point:</b>	

1. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



(a) **Critical Number(s):**

(b) **Increasing Interval(s):**

(c) **Decreasing Interval(s):**

(d) **Relative Maximum Occurs:**

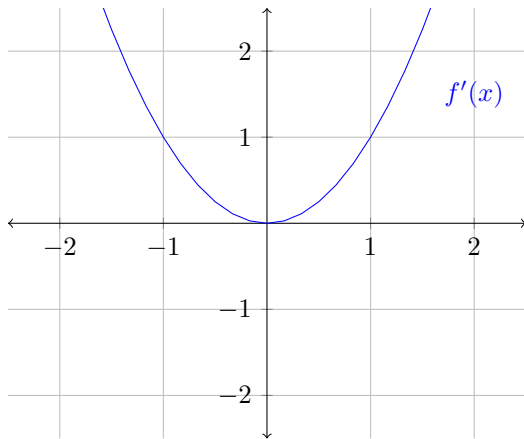
(e) **Relative Minimum Occurs:**

(f) **Concave Up Interval(s):**

(g) **Concave Down Interval(s):**

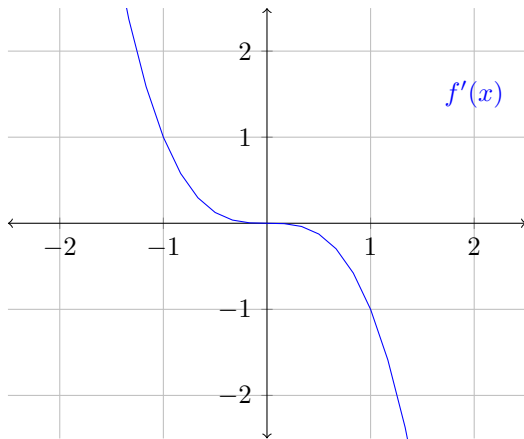
(h) **Inflection Point(s) Occurs:**

2. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



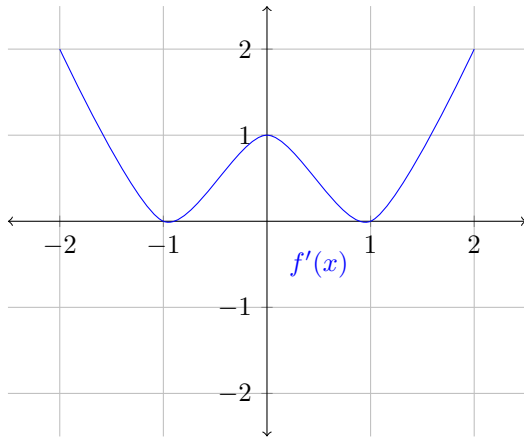
- (a) **Critical Number(s):**
- (b) **Increasing Interval(s):**
- (c) **Decreasing Interval(s):**
- (d) **Relative Maximum Occurs:**
- (e) **Relative Minimum Occurs:**
- (f) **Concave Up Interval(s):**
- (g) **Concave Down Interval(s):**
- (h) **Inflection Point(s) Occurs:**

3. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



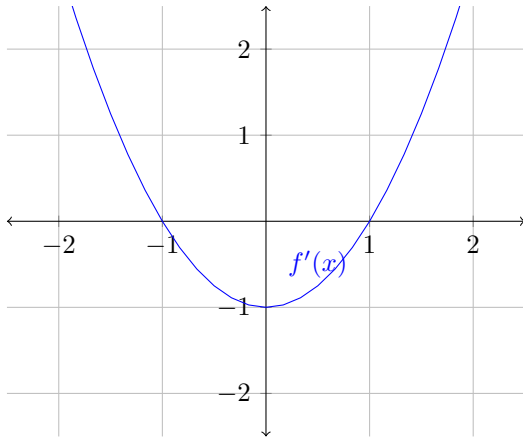
- (a) **Critical Number(s):**
- (b) **Increasing Interval(s):**
- (c) **Decreasing Interval(s):**
- (d) **Relative Maximum Occurs:**
- (e) **Relative Minimum Occurs:**
- (f) **Concave Up Interval(s):**
- (g) **Concave Down Interval(s):**
- (h) **Inflection Point(s) Occurs:**

4. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



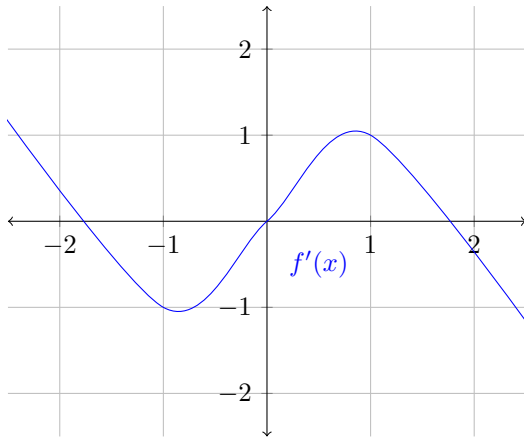
- (a) **Critical Number(s):**
- (b) **Increasing Interval(s):**
- (c) **Decreasing Interval(s):**
- (d) **Relative Maximum Occurs:**
- (e) **Relative Minimum Occurs:**
- (f) **Concave Up Interval(s):**
- (g) **Concave Down Interval(s):**
- (h) **Inflection Point(s) Occurs:**

5. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



- (a) **Critical Number(s):**
- (b) **Increasing Interval(s):**
- (c) **Decreasing Interval(s):**
- (d) **Relative Maximum Occurs:**
- (e) **Relative Minimum Occurs:**
- (f) **Concave Up Interval(s):**
- (g) **Concave Down Interval(s):**
- (h) **Inflection Point(s) Occurs:**

6. Given the graph of  $f'(x)$  below, answer the following question for  $f(x)$ .



- (a) **Critical Number(s):**
- (b) **Increasing Interval(s):**
- (c) **Decreasing Interval(s):**
- (d) **Relative Maximum Occurs:**
- (e) **Relative Minimum Occurs:**
- (f) **Concave Up Interval(s):**
- (g) **Concave Down Interval(s):**
- (h) **Inflection Point(s) Occurs:**

**Summary:** When given the graph of  $f'$  ,

<b>1. Critical Number:</b>	
<b>2. Increasing:</b>	
<b>3. Decreasing:</b>	
<b>4. Relative Max Occurs:</b>	
<b>5. Relative Min Occurs:</b>	
<b>6. Concave Up:</b>	
<b>7. Concave Down:</b>	
<b>8. Inflection Point Occurs:</b>	