Increasing/Decreasing

1. Draw a picture of an increasing function.

2. Draw 3 tangent lines to your function.

3. What do these tangent lines have in common?

4. If a function is increasing, then the _____ of the function is _____.

5. Use a _____ to find where the _____ is _____.

6. Draw a graph of a decreasing function.

7. Draw 3 tangent lines to the function.

8. What do these 3 tangent lines have in common?

9. If a function is decreasing, then the _____ of the function is _____.

10. Use a _____ to find where the _____ is _____.

Relative Max/Min

1. Draw a function with a relative min and indicate the relative min with an arrow.

2. To the left of the min, the function is _____, so the derivative is _____.

3. To the right of the min, the function is _____, so the derivative is _____.

4. At the min, the tangent line is _____, so the derivative is _____.

5. Use a _____ to find the relative min.

6. Draw a function with a relative max and indicate the relative max with an arrow.

7. To the left of the max, the function is _____, so the derivative is _____.

8. To the left of the max, the function is _____, so the derivative is _____.

9. At the max, the tangent line is _____, so the derivative is _____.

10. Use a _____ to find the relative max.

Concave Up/Concave Down

1. Draw a graph of a function that is concave up.

2. Draw a series of tangent lines.

3. What is the trend of the tangent lines as you go from left to right?

4. If the slopes of the tangent lines are _____, then the derivative of the slopes of the tangent lines is _____. Therefore the _____ is _____.

5. Use a _____ to determine where the _____ of the function is _____.

6. Draw a graph of a function that is concave down.

7. Draw a series of tangent lines.

8. What is the trend of the tangent lines as you go from left to right?

9. If the slopes of the tangent lines are _____, then the derivative of the slopes of the tangent lines is _____. Therefore the _____ is _____.

10. Use a _____ to determine where the _____ of the function is _____.