Determine the Transformations and Vertex:

1.  2.  3. 

Graph the following in vertex form:

1. ****
2. ****

Graph the following in standard form:

1. ****

****

1. 
2. ****

Convert from Standard to Vertex Form:

1.  2. 
2.  4. 

Convert from Vertex to Standard Form:

1. ** 2. **
2. **** 4. 

Characteristics of Graphs:

![[image]]()

Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Axis of Symmetry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max/Min Value: \_\_\_\_\_\_\_\_\_\_\_\_

Y-Intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zeroes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interval of Increase:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interval of Decrease:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

End Behavior: as x 🡪 -∞, f(x) 🡪 \_\_\_\_\_\_; as x 🡪 ∞, f(x) 🡪 \_\_\_\_\_\_\_

Rate of change on the interval -1 < x< 0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Axis of Symmetry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Interval of Increase:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Interval of Decrease:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Extrema: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Max/Min Value: \_\_\_\_\_\_\_\_\_\_\_\_**

**Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Y-Intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zeroes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rate of change on the interval -3 < x< 0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Axis of Symmetry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Interval of Increase:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Interval of Decrease:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Extrema: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Max/Min Value: \_\_\_\_\_\_\_\_\_\_\_\_**

**Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Y-Intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zeroes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rate of change on the interval -3 < x< 0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Between what x-values is the graph negative? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

![[image]]()

Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Axis of Symmetry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max/Min Value: \_\_\_\_\_\_\_\_\_\_\_\_

Y-Intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zeroes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interval of Increase:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interval of Decrease:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

End Behavior: as x 🡪 -∞, f(x) 🡪 \_\_\_\_\_\_; as x 🡪 ∞, f(x) 🡪 \_\_\_\_\_\_\_

Rate of change on the interval 1 < x< 3:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Between what x-values is the graph positive? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Application:

1.

2.

3.



4.