TOPIC 15-1: AREA UNDER A CURVE
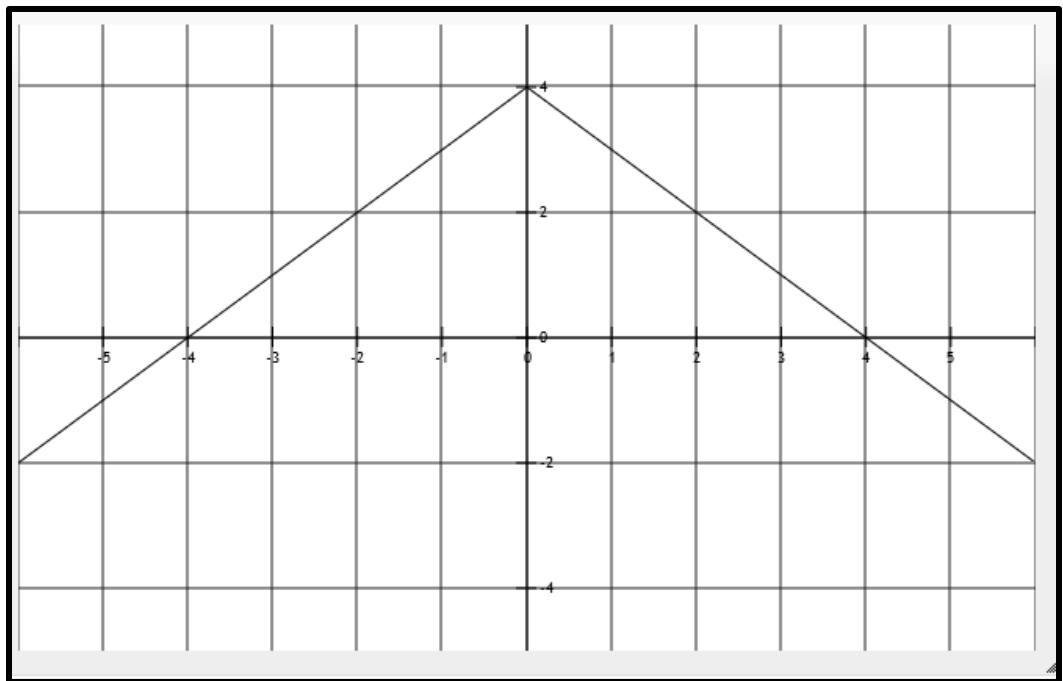
**Area Under a Curve:** the area between the function and the x-axis.

Total Area: the area of regions bounded by the function and x-axis.

Net Area: the difference of the areas of regions below the x-axis and the areas of regions above the x-axis.

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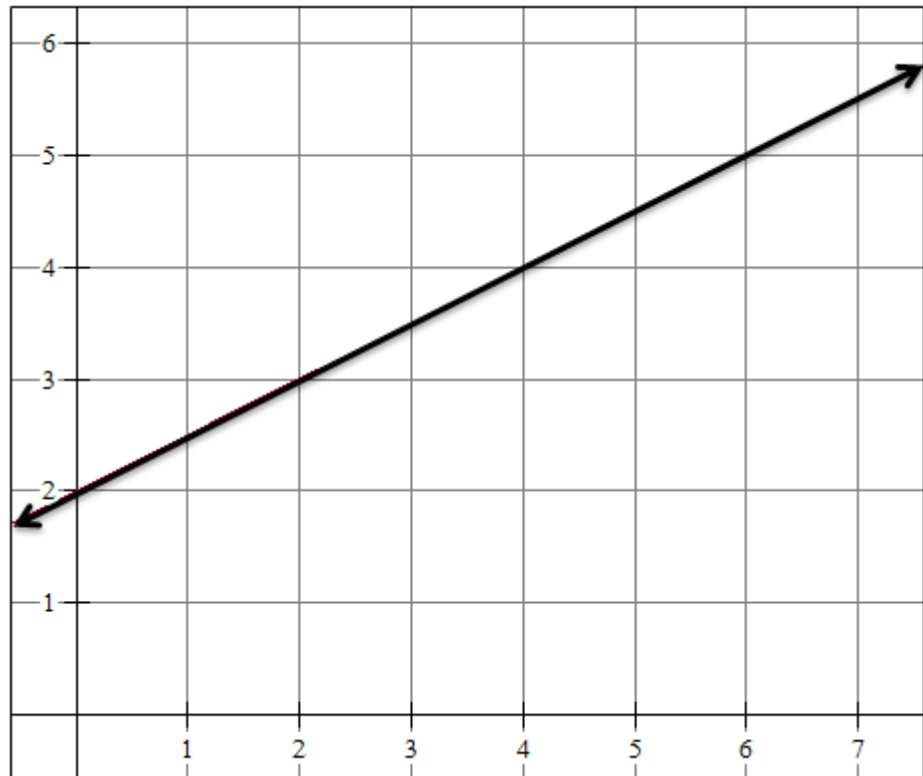
EXAMPLE 1:

1. Find the area under the curve from -5 to 5.

2. What is the equation of the graph of the piecewise function above?

3. Show the work for finding the total area under the curve.

4. Show the work for finding the net area under the curve.
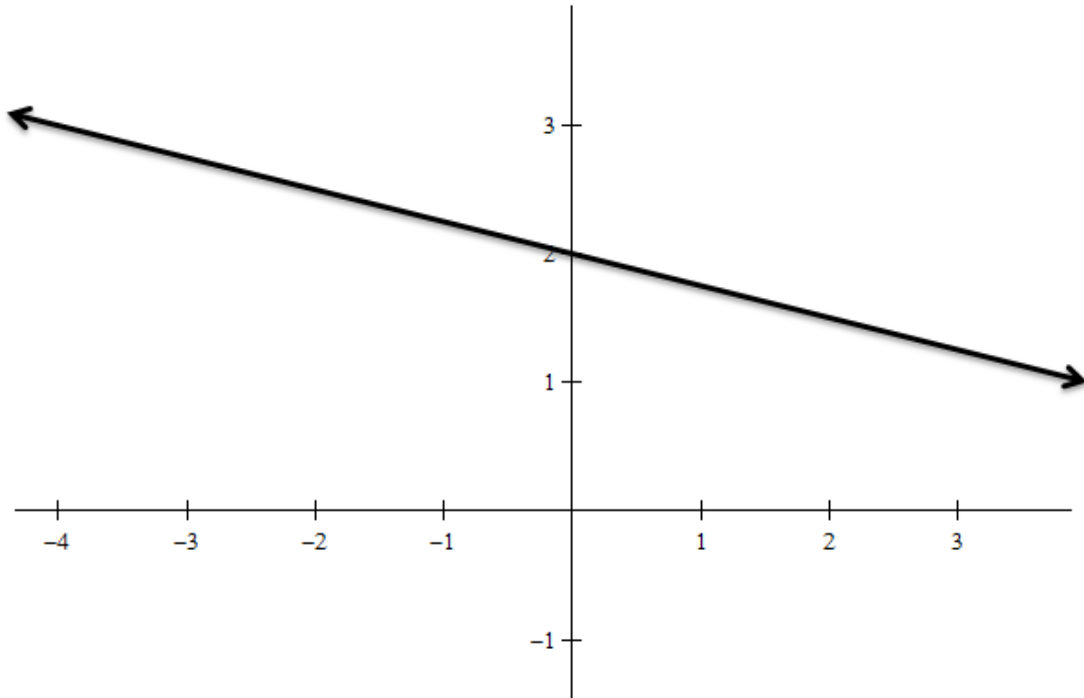
EXAMPLE 2:
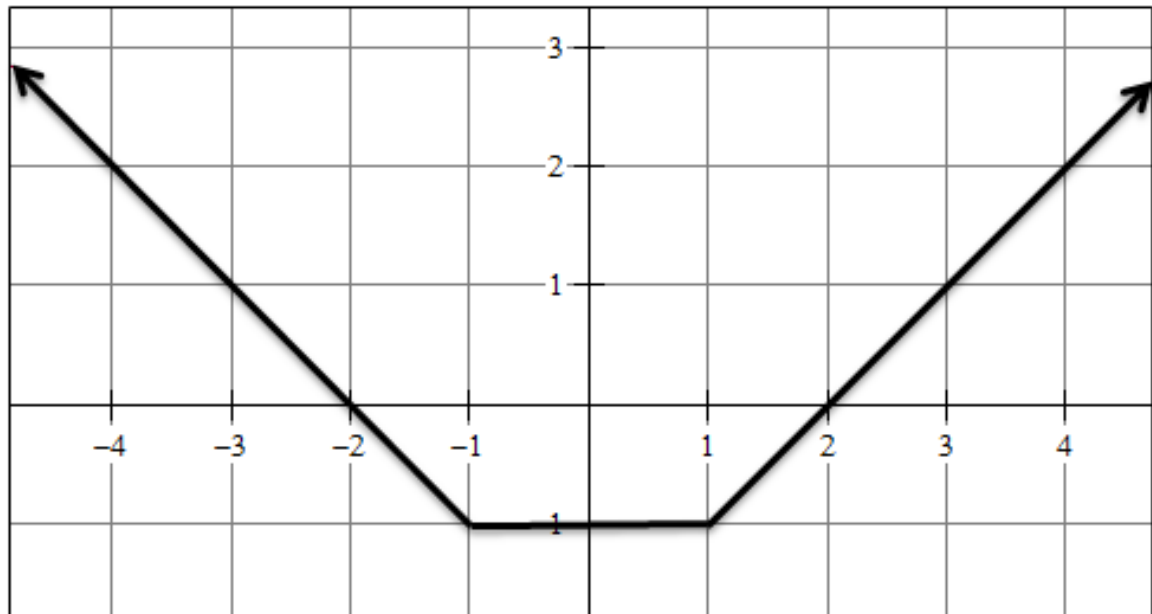
1. Find the area under the curve from -3 to 3.

2. What is the equation of the graph of the piecewise function above?

3. Show the work for finding the total and net area under the curve.

EXAMPLE 3:

1. Find the area under the curve from 2 to 6.

2. What is the equation of the graph above?

3. Show the work for finding the total and net area under the curve.

EXAMPLE 4:

Interval: $-4 \leq x \leq 2$

Equation: $y = -\dfrac{1}{4}x + 2$

Total Area: _____   Net Area: _____