Student 4: High Achieved

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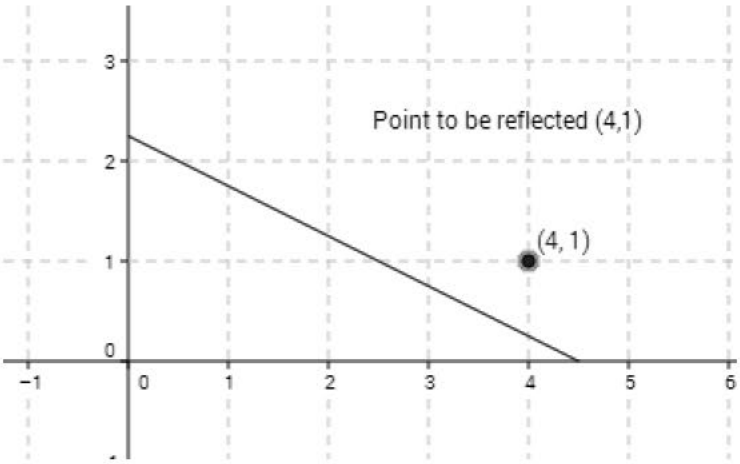

Gradient of mirror line

$$\frac{2.25-0}{0-4.5}=\frac{2.25}{-4.5}=-0.5=-\frac{1}{2}$$

1

Gradient of perpendicular line

$$m_1 \times m_2 = -1 \qquad -\frac{1}{2}\times m_2 = -1 \qquad m_2 = \frac{2}{1}$$

2

Equation of mirror line

$$y-2.25=-\frac{1}{2}(x-0) \qquad y-2.25=-\frac{1}{2}x \qquad y=-\frac{1}{2}x+2.25$$

Perpendicular equation

$$y-1=2(x-4)=2x-8 \qquad y=2x-7$$

3

$$2x+4y-9=0$$
$$-2x+y+7=0$$
$$5y-2=0$$
$$y=\frac{2}{5}$$

$$2x+47-9=0$$
$$8x-4y-28=0$$
$$10x-37=0$$
$$x=\frac{37}{10}$$

intersection $(\frac{37}{10},\frac{2}{5})$

4

Distance between point to be reflected and (4.5,0)

$$d^2=\sqrt{(1^2+0.5^2)}=1.12(2dp)$$

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