Rules for Shear and Moment Diagrams

1. The slope of the shear diagram at any point is equal to (-) the load intensity at the same point.

$$\frac{dV}{dx} = -w$$

2. The change in shear between two points on the shear diagram is equal to (-) the area under the loading diagram between the same two points.

$$\Delta V_{AB} = V_B - V_A = -\int_{x_A}^{x_B} w dx$$

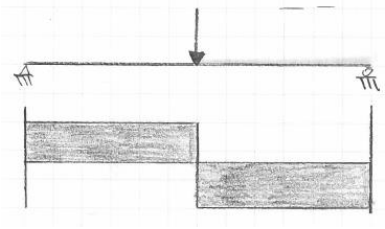
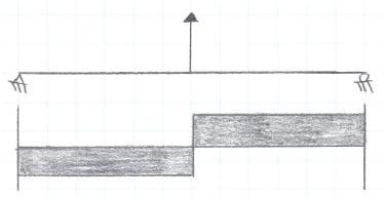
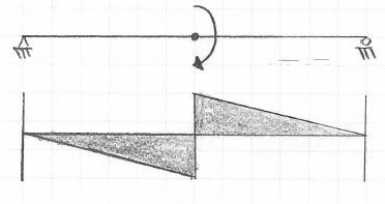
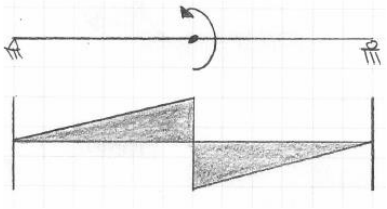
3. The slope of the moment diagram at any point is equal to the shear the same point

$$\frac{dM}{dx} = V$$

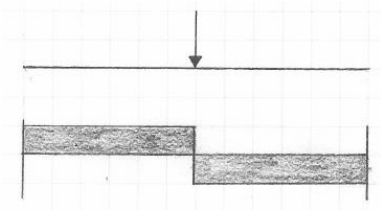
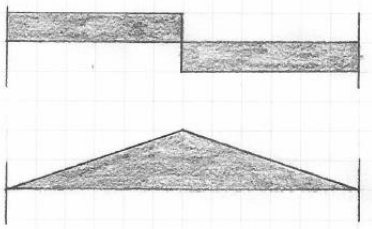
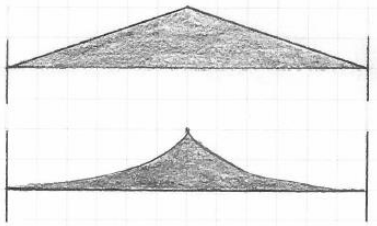
4. The change in moment between two points on the moment diagram is equal to the area under the shear diagram between the same two points.

$$\Delta M_{AB} = M_B - M_A = \int_{x_A}^{x_B} V dx$$

Always Go Left to Right

1. Downward external force moves the V diagram downward.	
2. Upward external force moves the V diagram upward.	
3. Clockwise external moment moves the M diagram upward.	
4. Counter clockwise external moment moves the M diagram downward.	

Guidelines for the Shape of Shear and Moment Diagrams

1. *Lines* lead to *Rectangles.*	
2. *Rectangles* lead to *Triangles.*	
3. *Triangles* lead to S*econd-order Parabolas.*	
4. S*econd-order Parabolas* Lead to *Third-order Parabolas.*