

# Warm Up

1. What distance is covered by a ball that is thrown downward at  $5.00 \text{ m/s}$  and achieves a final velocity of  $85.0 \text{ m/s}$ ?
2. What is the mass of an object that had  $250. \text{ N}$  of force applied to it to accelerate it from  $4.00 \text{ m/s}$  to  $16.0 \text{ m/s}$  in a time of  $4.00 \text{ sec}$ ?

# Targets

- I can explain how to find the equilibrant.



# Forces and Motion in 2D

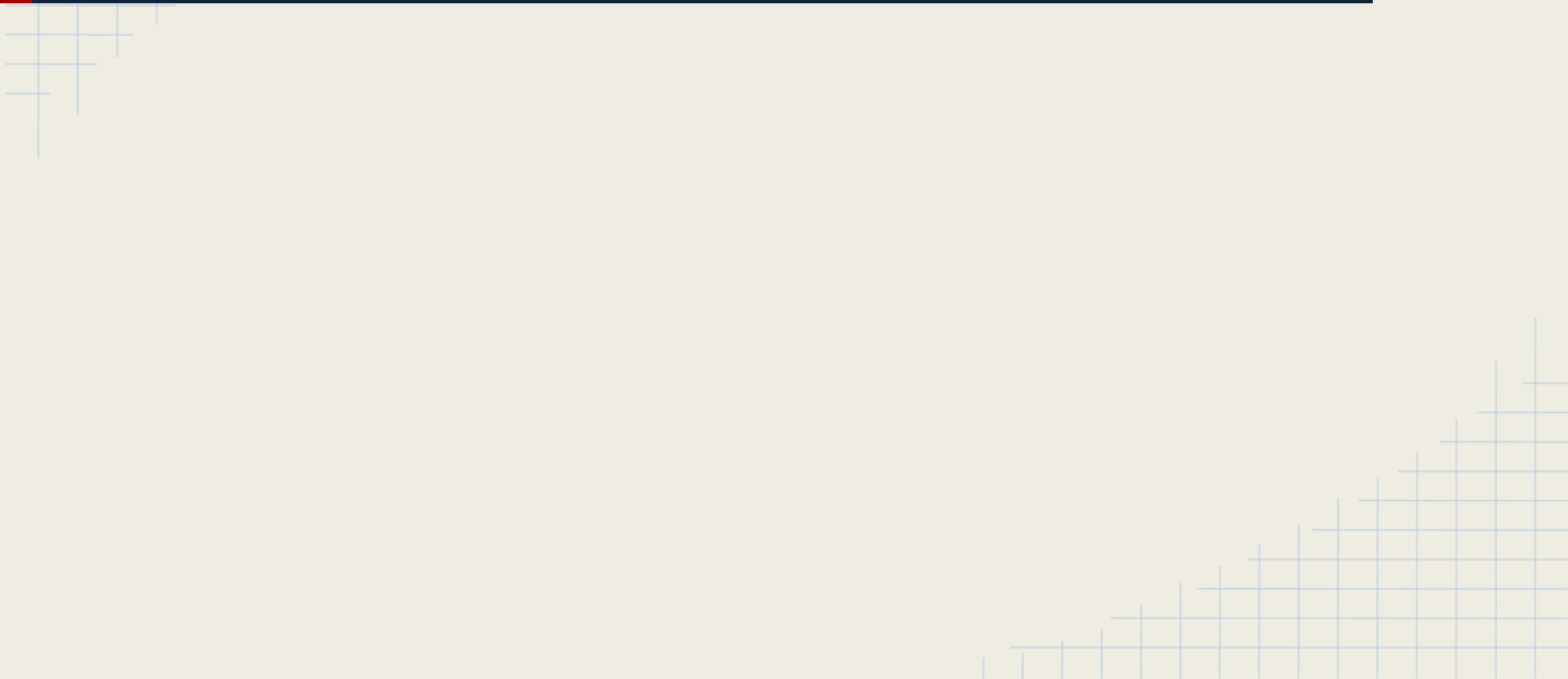
- Equilibrium happens when the net force on an object is zero.
- If two forces are exerted on an object and its net force is not zero, how could you make it zero?

- A force that puts an object in equilibrium is called the equilibrant.
- The equilibrant will be the opposite of the overall net force.

- To find the equilibrant, the net force on the x-axis and the y-axis needs to be found.
- Once this is found, the hypotenuse can be found to determine the overall force.

- To find the angle, the inverse tangent can be used and adding or subtracting  $180^\circ$ .
- This finds the force and angle needed to balance out the net force the other forces are applying.

# Summary





# Assignment

