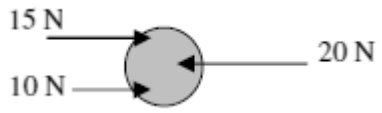
Name: _____ Block: _____

Resolving Forces #1

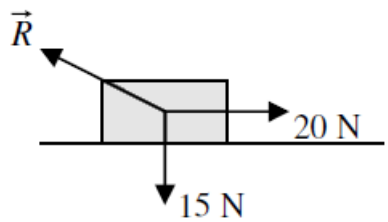
1. An object has three forces acting on it, a 15 N force and a 10. N force pushing to the right, and a 20. N force pushing to the left, as shown in the diagram below.



What is the net force (magnitude and direction) on the object?

5 N right

2. A stationary block has three forces acting on it: a 20. N force to the right, a 15 N force downwards, and a third force, $\vec{R}$ of unknown magnitude and direction, as shown in the following diagram:



Find the magnitude and direction of $\vec{R}$.

25 N

+37°

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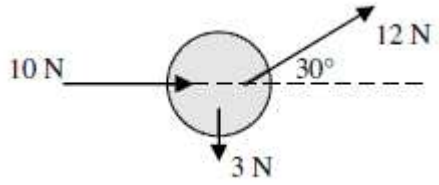
3. Three forces act on an object. One force is 10. N to the right, one force is 3.0 N downwards, and one force is 12 N at an angle of 30.° above the horizontal, as shown in the diagram below.

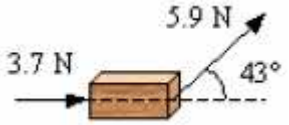


What is net force (magnitude and direction) on the object? (*Hint: resolve the forces into a vertical component and a horizontal component, then find the resultant of the two.*)

$\boxed{20.6\ \text{N}}$

$\boxed{+8.4°}$

4. A force of 3.7 N horizontally and a force of 5.9 N at an angle of 43° act on a 4.5-kg block that is resting on a frictionless surface, as shown in the following diagram:



What is the magnitude of the horizontal acceleration of the block?

$\boxed{1.8\ \frac{\text{m}}{\text{s}^2}}$