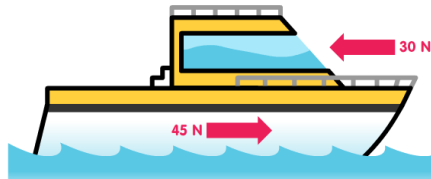


Answer on Question #72327, Physics / Mechanics | Relativity |

The diagram shows the forces acting on a boat. The boat has a mass of 300 kg. What is the acceleration of the boat?



Solution

$$m = 300 \text{ kg}$$

$$F_1 = 45 \text{ N}$$

$$F_2 = 30 \text{ N}$$

$$a = ?$$

$$m a = F_1 - F_2, \quad a = (F_1 - F_2)/m,$$

$$a = (45\text{N} - 30\text{N})/300 \text{ kg} = 15\text{N}/300\text{kg} = 0.05 \text{ m/s}^2$$

Answer: 0.05 m/s²