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1. A projectile is launched at 32.0m/s at an angle of  $30^{\circ}$  above the horizontal from a point 104m above ground level. When it reaches a point 30.0 m above ground level, it will have a velocity of  $v = \underline{\hspace{2cm}}$  in component form.
2. Two cars, A and B are traveling in opposite directions at constant speeds in parallel lanes. Car A has a speed of 18.0 m/s and car B has a speed of 10.0 m/s. In 3.00 seconds, the distance between cars A and B will change by?
3. A projectile is launched with an initial speed of 25.0 m/s at an angle of  $35^{\circ}$  above the horizontal. Its vertical component of initial velocity is?
4. A 20kg sled is pulled 36m across a horizontal surface at a constant 2.0m/s. The pulling force has a magnitude of 80N and is directed at an angle of  $30^{\circ}$  above the horizontal. The power generated by the pulling force is?
5. A 342kg motorcycle and rider pass over the top of a hill at 22m/s. The hill has a radius curvature of 120m. Calculate the normal force acting on the bike at the top of the hill.
6. A 350kg sailboat has an acceleration of  $0.62\text{m/s}^2$  at an angle of  $64^{\circ}$  north of east. Find the magnitude and direction of the net force that acts on the sailboat.