

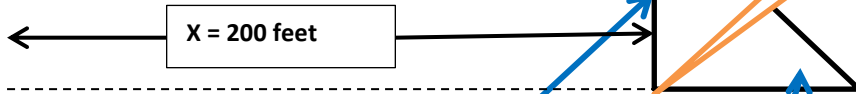
PROJECTILES & KINEMATICS

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X Games Snowmobilers Shrug Off Injury Concern

ASPEN, Colo. — A bruised hip, a broken femur and a double dislocation of the shoulders — count these injuries among the recent setbacks of freestyle snowmobile riders competing in the Winter X Games, starting here Thursday. Absent from the lineup are two former gold-medal-winning riders who crashed more recently this month. One sustained multiple vertebrae fractures of the neck two days after another's shin bone crumpled in the same practice pit in Minnesota.



INTRODUCTION: These snowmobilers Practice these flips in foam pits prior to doing them on snow.

QUESTION: If the snowmobile at left Landed 200 ft from base of ramp, Find the speed(in ft/s & mph) as it left the ramp and time of flight?

HINT: Take the origin of coordinate system to be at top of ramp. $88 \text{ ft/s} = 60 \text{ mph}$

ANSWER: $v = \sim 78.94 \text{ ft/s}$ or $\sim 53.8 \text{ mph}$
 $t = \sim 3.94 \text{ s}$

The snowmobiler Aleksandrer Nordgaard of Norway performing at the Winter X Games in 2007.

It is one thing to soar off a **10-foot tall, 50-degree ramp aboard 450-pound machines**. It is quite another to do so and also attempt to execute a double back flip or a front flip. Such is the sport of freestyle snowmobiling: high horsepower, intense competition, extreme risks and potentially serious consequences, with few limits and rewards. “We know full well what could happen, but we don’t really seem to care,” said [Paul Thacker](#), 35, a three-time X Games competitor whose spine was badly injured in a crash in 2010. [Heath Frisby](#), 27, has landed hundreds of back flips and back-flip combinations in his career, which he traces back to age 14 and across five Winter X Games since 2007, when freestyle snowmobiling was added as a sport. But Frisby has never landed a front flip on his snowmobile. Nobody has, as far as these athletes know. But on Sunday night, in the snowmobile best trick competition, Frisby plans to try. “I haven’t told anybody about it yet,” Frisby said Tuesday night, **“but I’ve got it dialed in on the foam pit.”** Elite riders like Frisby **practice tricks in pits of foam cubes** the way tightrope walkers use nets to save them from miscues and hard landings.