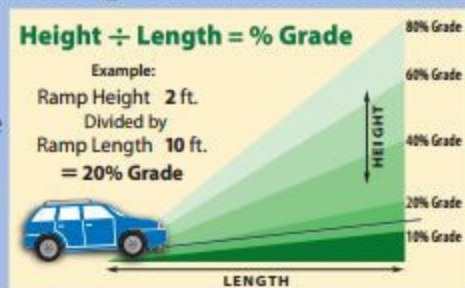




Pulling anything with wheels up a slope involves some Laws of Physics, but calculating the Rolling Weight to determine the winch you need, is simple.

1. Determine Gross Vehicle Weight (GVW). This is the weight of the vehicle alone (curb weight), plus the weight of any items in and on the vehicle. (See examples in "The Right 4x4 Winch.")
2. How steep is the slope or ramp? Divide the height of the ramp by the length to determine the Grade.

It's a common mistake to confuse the degree of the angle of a slope with the grade percent. Angle (degree) is a geometric measure. You must know the grade % to find the Rated Line Pull you need.



With the GVW and the Grade % known, find the approximate size of the winch you need:

Consider all factors. Some situations may require a larger or different type of pulling device.

Choosing a Winch for Rolling Weight						Rated Line Pull (Suggested Winch*)
Grade:	10%	20%	40%	60%	80%	lbs.
Approximate Gross Vehicle Weights	5,025	3,401	2,155	1,664	1,422	1,000
	10,050	6,803	4,308	3,331	2,845	2,000
	15,075	10,251	6,428	4,991	4,268	3,000
	20,100	13,597	8,643	6,655	5,690	4,000
	25,126	17,009	10,776	8,320	7,112	5,000
	30,151	20,408	12,931	9,983	8,535	6,000
	45,226	30,612	19,397	14,975	12,802	9,000

* Winch size is approximate