



Pilot Math 101

1. Help Captain Eric figure how much fuel he needs to order from the fuelers at ground control to get to his destination in Boise, ID. He used almost a full tank on his last flight. He will need 5,000 lbs to get to Boise.

Here is the formula Captain Eric will use:

Start with the pounds needed to fill up, 3,000 lbs needed, then omit last 0, divide by 1/2, add both numbers to get gallons needed. Example: need 3000 lbs = 3000, omit last 0 = 300, add 1/2 of that = $300 + 150 = 450$ gallons needed.

Did you know: jet pilots calculate fuel in lbs of fuel per hour not gallons, but fuelers fuel the airplane by gallons.

2. Now help Captain Eric determine how to land the airplane. When he flies into Boise, the airports altitude will be 2,871 feet. As he begins to land the aircraft, his altitude will be 35,000 feet. How many miles away from the airport will he start his descent in order to land safely?

Here is the formula:

Take the difference in your altitude and the altitude of the airport. So let's say your descending into New York which is at sea level, that would be a 40,000 foot difference. Omit the last three numbers off the difference = 40. multiply by 3. $40 \times 3 = 120$. So you should start your descent at 120 miles out.

3. But you're not finished.

How fast should you descend? This is measured on an instrument called a vertical speed indicator in ft. per minute? Captain Eric will have a ground speed of 425 miles per hour when he begins his approach to the Boise airport.

Take your ground speed, let's say 500 miles per hour, divide by 2 and add a 0 to get your rate of descent. Example: $500 \div 2 = 250$ and add a zero to the end to get 2500.

So you should descend _____ miles out and start your descent at _____ feet per minute.

Congratulations! You did it, you helped Captain Eric safely land.