

What we need to calculate	Order	How we will get/calculate
Perform Weight and Balance	1	Use your POG/AFM W&B worksheet and charts to calculate. Do this first to avoid re-work
Plot straight line course on chart	2	Using your chart and ruler draw a straight line from your departure airport to your landing airport
Determine checkpoints	3	Examine your straight line path and correct it for easy to find checkpoints, avoiding terrain, avoiding airspace, etc.. Record your checkpoints in your cross-country planner
Gather weather reports & forecasts	4	Gather local weather via area forecasts and TAFs at your landing and takeoff airports and gather enroute weather information via winds aloft, area forecasts, and AIRMETs/SIGMETs/PIREPs.
Gather known traffic delays	5	At airports and enroute from TFRs, NOTAMs, and PIREPs
Gather runway lengths, diagrams and other information	6	From terminal area and sectional charts + AFD/chart supplements. Gather info for alternate runways too
Determine cruise altitudes	7	Using a chart we choose a cruise altitude based off terrain, airspace, obstacles and the hemispherical rule
Determine distances to each checkpoint	8	Measuring off our chart using our plotter/ruler
Estimate fuel required for flight	9	Using total distance and conservative fuel consumption rate. Don't forget fuel for taxi, run-up, approach and descent and reserve
True Course to each Checkpoint	10	Read this value off the plotter and chart
Magnetic Course to each Checkpoint	11	True Course +/- Variation (isogonic)
Record winds and temperatures for cruise altitudes	12	Using winds aloft to interpolate at your cruise altitudes
Determine total distance to climb	13	Using your Fuel, Time, Distance to Climb chart for your aircraft
Adjust checkpoints for top of climb	14	Put a checkpoint at the top of your climb and adjust distances and courses accordingly
Altitude & Fuel to each checkpoint during Climb	15	Using Distance and an interpolated temperature to back calculate altitude on Fuel, Time, Distance to Climb chart while also calculating fuel to each checkpoint
Determine total distance to descend	16	Using your Fuel, Time, Distance to Descend chart for your aircraft
Adjust checkpoints for start of descent	17	Put a checkpoint at the start of your descent and adjust distance and courses accordingly
Altitude to each checkpoint during descent	18	Using Distance and an interpolated temperature to back calculate altitude on Fuel, Time, Distance to Descend chart

Record winds and temperatures for climb and descent altitudes	19	Using winds aloft and TAF/local area forecast to interpolate at your altitudes
Record targeted Indicated Airspeed during climb	20	During climb you will target best rate or best angle of climb, record this as your targeted indicated airspeed for climb so we can use this to determine true airspeed
Record targeted RPM during cruise and descent	21	During cruise and descent you can target an RPM rather than an indicated airspeed (your preference), record this for all cruise and descent checkpoints so we can use this to determine true airspeed
True Airspeed to each checkpoint during climb	22	Using your E6B with temperature and altitude at each checkpoint
Engine Power Setting during at each checkpoint during cruise and descent	23	Using your RPM, altitude and temperature at each checkpoint determine the Engine Power Setting using the Engine Performance chart
True Airspeed to each checkpoint during cruise and descent	24	Using your Engine Power Setting and the Best Power Cruise Performance chart
Ground speed to each checkpoint during climb	25	Using True Airspeed and wind data with the E6B tool
Wind Correction Angle to each checkpoint	26	Wind Correction Angle using E6B tool
Magnetic Heading to each checkpoint	27	Magnetic Course corrected for wind correction angle
Time to each checkpoint	28	Using Distance/Ground speed to get time
Fuel used to each checkpoint during cruise & descent	29	Using Time and known fuel burn rate per hour at our cruise power setting
Total Distance	30	Summing up the distance to each checkpoint
Total Time	31	Summing up the time to each checkpoint
Total Fuel used	32	Summing up the fuel used to each checkpoint during climb, cruise and descent as well as total fuel for taxi & run-up, approach & landing and reserves.
Takeoff Weights	33	1 st takeoff uses the takeoff weight or gross weight from our weight and balance calculations (next section) 2 nd takeoff subtracts fuel burned weight (6 lbs/gallon of fuel) if no refill takes place and used takeoff weight or gross weight from weight and balance if refilled
Landing Weights	34	1 st landing subtracts fuel burned weight (6 lbs/gallon of fuel) 2 nd landing subtracts fuel burned weight based off of 2 nd takeoff weight above
Takeoff Distances	35	Using 0° Flaps Takeoff Ground Roll chart (if no obstacle and no flaps) Using 0° Flaps Takeoff Performance chart (if obstacle and no flaps) Using 25° Takeoff Ground Roll chart (if no obstacle and flaps) Using 25° Flaps Takeoff Performance (if obstacle and flaps)
Landing Distances	36	Using Landing Distance chart (if obstacle) Using Landing Ground Roll chart (if obstacle)