



E6B Flight Computer Review

Key Terminology

Define the following terms on the back of this paper: air speed, ground speed, headwind, tailwind, wind correction angle, fuel burn rate, E6B

Solve the following problems. Make sure to show your work and label your units.

Circular Calculator Side: Time, Speed, and Distance

1. How long will it take a pilot to fly if she has a distance of 100 miles plans to fly with an airspeed of 120 mph?
Time=Distance ÷ Speed
Time = 100 miles ÷ 120 mph
Time = .83 hours or 50 minutes
2. How far does a plane travel if they have an airspeed of 145mph and travel for 3.5 hours?
Distance = Speed x Time
Distance = 145 mph x 3.5 hours
Distance = 507.5 miles
3. How fast is an airplane traveling it travels 260 miles in a time of 2 hours?
Speed = Distance ÷ Time
Speed = 260 miles ÷ 2 hours
Speed = 130 mph

Fuel Consumption

4. How much fuel is required if an aircraft burns fuel at a rate of 10 gallons per hour and is planned to be in flight for 2.5 hours?
Fuel= rate x time
Fuel= 10 gallons per hour x 2.5 hours
Fuel = 25 gallons



Ground Speed

5. What is the ground speed of an aircraft that has an airspeed of 100 knots and encounters a tailwind blowing 20 knots directly behind the aircraft?

Ground speed= airspeed + tailwind

Groundspeed = 100 knots + 20 knots

Groundspeed = 120 knots

6. What is the ground speed of an aircraft that has an airspeed of 120 Knots and encounters a headwind of 20 knots directly in front of the aircraft? How fast is the airplane moving over the ground?

Ground speed= airspeed - headwind

Groundspeed = 120 knots - 20 knots

Groundspeed = 100 knots

Wind Correction

7. Find the wind correction angle (WCA) a pilot must account for if the airplane is flying a true course (TC) of 180° , has a true airspeed (TAS) of 120 knots and has encountered wind at 270° at 12 knots.

Answers for 7-9

Worked Solution

Step 1: Set the wind direction (270°) under the true index.

Step 2: Plot the wind speed (**12 knots**) above the grommet.

Step 3: Rotate the wheel to the true course (180°).

Step 4: Slide the grid until the wind mark is on the **120-knot TAS** line.

Step 5: Read the results.

- The wind causes a drift of about **6° from the right**.
- To stay on course, the pilot must correct **into the wind**.
- There is little to no headwind/tailwind component, so groundspeed remains close to TAS.

Answers

Wind Correction Angle: 6° Right

True Heading: 186°

○ $180^\circ + 6^\circ = 186^\circ$

Groundspeed: 119 knots

8. In question #7, find the true heading (TH).
9. In question #7, find the ground speed (GS).
10. Explain why pilots must learn to use an E6B flight computer.

Make sure students use complete sentences. Students should reference that technology can fail and having the basic foundation of flight is critical to safety.