

Mr. Tu's Excellent Examples

Module 3 Stunt Pilot



Applying Lesson 3.1

1. The lowest point in the United States is in Badwater Basin, California. The elevation is 281 feet below mean sea level (MSL). If land elevation is measured relative to MSL, what would the elevation at Badwater Basin be?

-281 feet MSL

2. The elevation of Death Valley Airport is -210 MSL. What is the vertical distance between Death Valley Airport and zero MSL? Show using absolute value.

$$|-210| = 210$$

The vertical distance between Death Valley Airport and zero MSL is 210 feet.

3. The elevation of Death Valley Airport is -210 feet MSL. The elevation of Badwater Basin is -281 feet MSL. What is the absolute value of the elevation change from Badwater Basin to Death Valley Airport?

$$|-281| - |-210| = 281 - 210 = 71$$

The absolute value of the elevation change is 71 feet MSL.

Applying Lesson 3.2

1. According to the instruments, a stunt pilot is 3,000 feet above the ground. If the pilot increases the elevation of the plane by 1,000 feet, what is the new elevation?
Write and solve an equation using addition to find the new elevation.

$$3,000 \text{ feet} + 1,000 \text{ feet} = 4,000 \text{ feet}$$

The new elevation of the plane is 4,000 feet above the ground.

2. A plane has an elevation of 4,000 feet above the ground. The plane loses 3,000 feet of altitude. Write and solve an equation using addition to show the new elevation of the plane.

$$4,000 + (-3,000) = 1,000$$

The plane is 1,000 feet above the ground.

3. Ground speed is the speed a plane is traveling in relation to the ground. Air speed is the speed a plane is traveling through the air. If a plane has an air speed of 300 miles per hour while flying into a headwind of 50 miles per hour, the ground speed is 250 miles per hour. If a plane has an air speed of 300 miles per hour and a tailwind of 50 miles per hour, the ground speed is 350 miles per hour. A plane has an air speed of 500 miles per hour. The plane is flying with a 40 mile per hour tail wind. Write and solve an addition problem to show the ground speed.

$$500 \text{ miles per hour} + 40 \text{ miles per hour} = 540 \text{ miles per hour}$$

The plane has a ground speed of 540 miles per hour.

4. A plane has an air speed of 450 miles per hour and a head wind of 30 miles per hour. Write and solve an equation using addition to show the ground speed.

$$450 + (-30) = 420 \text{ miles per hour}$$

The plane has a ground speed of 420 miles per hour.

Applying Lesson 3.3

1. A plane has an altitude of 8,000 feet above the ground. The plane loses 4,000 feet of altitude. Write and solve a subtraction problem to show the new altitude.

$$8,000 - 4,000 = 4,000$$

The plane is 4,000 feet above the ground.

2. A plane has an air speed of 380 miles per hour. The plane is flying into a 30 mile per hour headwind. Write and solve a subtraction problem to show the ground speed.

$$380 - 30 = 350 \text{ miles per hour ground speed}$$

3. A plane has a ground speed of 400 miles per hour but is flying into a 40 mile per hour headwind. Write and solve a subtraction problem that would show the ground speed if the headwind stopped?

$$400 - (-40) = 440 \text{ miles per hour}$$

Applying Lesson 3.4

1. The vertical speed indicator in a stunt plane indicates that the plane is going up at a rate of 500 feet per minute. If this rate remains constant for five minutes, how much altitude will be gained? Write and solve a multiplication problem to show your answer.

$$500 \text{ feet per minute} \times 5 \text{ minutes} = 2,500 \text{ feet}$$

2. The vertical speed indicator of an airplane indicates that the plane is losing altitude at a rate of 400 feet per minute. If this rate remains constant, what will the change in altitude be in six minutes? Write and solve a multiplication problem to show your answer.

$$\text{-400 feet per minute} \times \text{6 minutes} = \text{-2,400 feet}$$

3. A pilot determines that to safely fly over a mountain, the altitude of the plane must be increased by 1,800 feet. If the pilot will not reach the mountain for at least six more minutes, at what rate per minute must the vertical speed increase? Write and solve a division problem to show this.

$$\text{1,800 feet} \div \text{6 minutes} = \text{300 feet per minute}$$