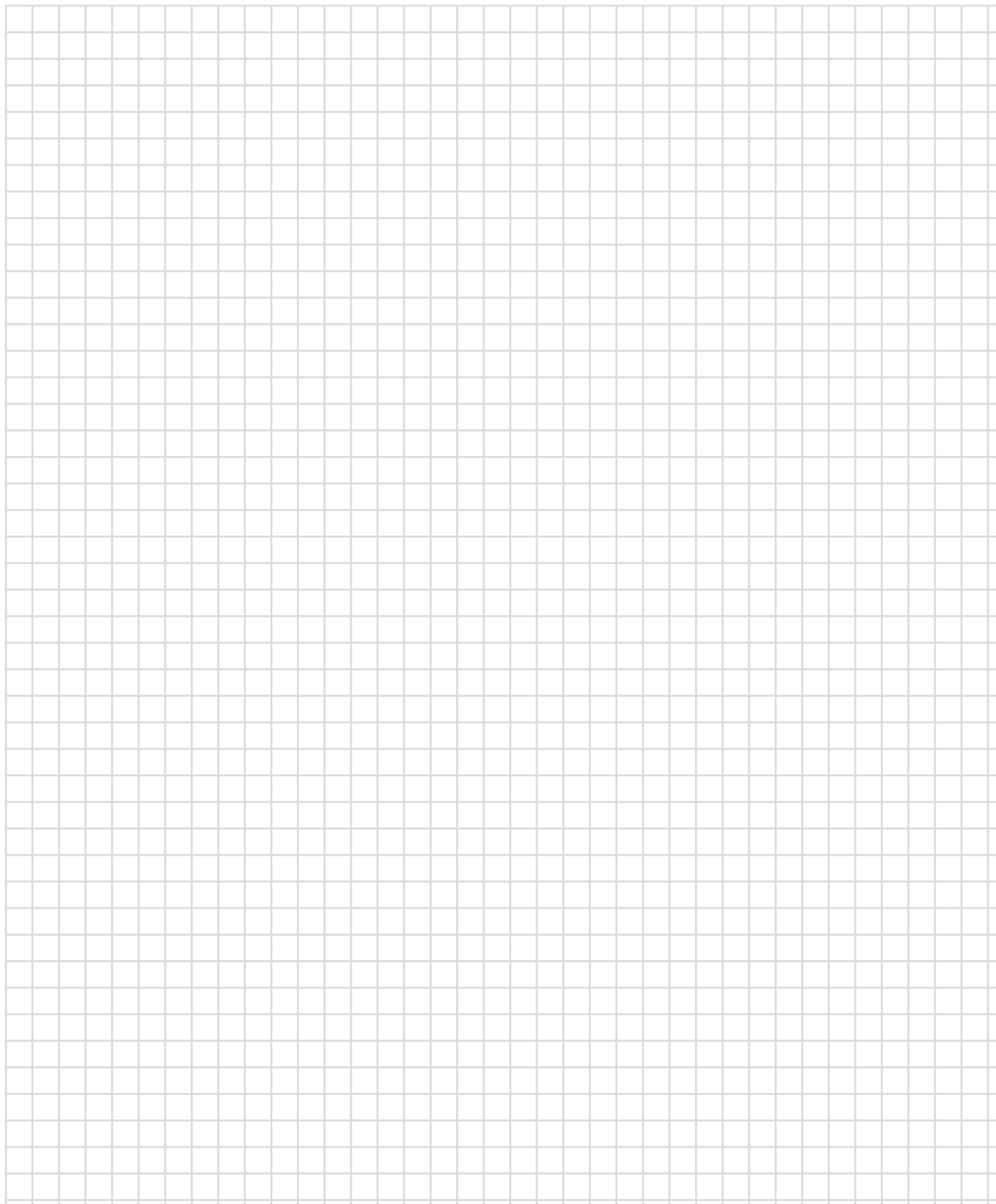


1-3

What are the characteristics of a vector quantity?

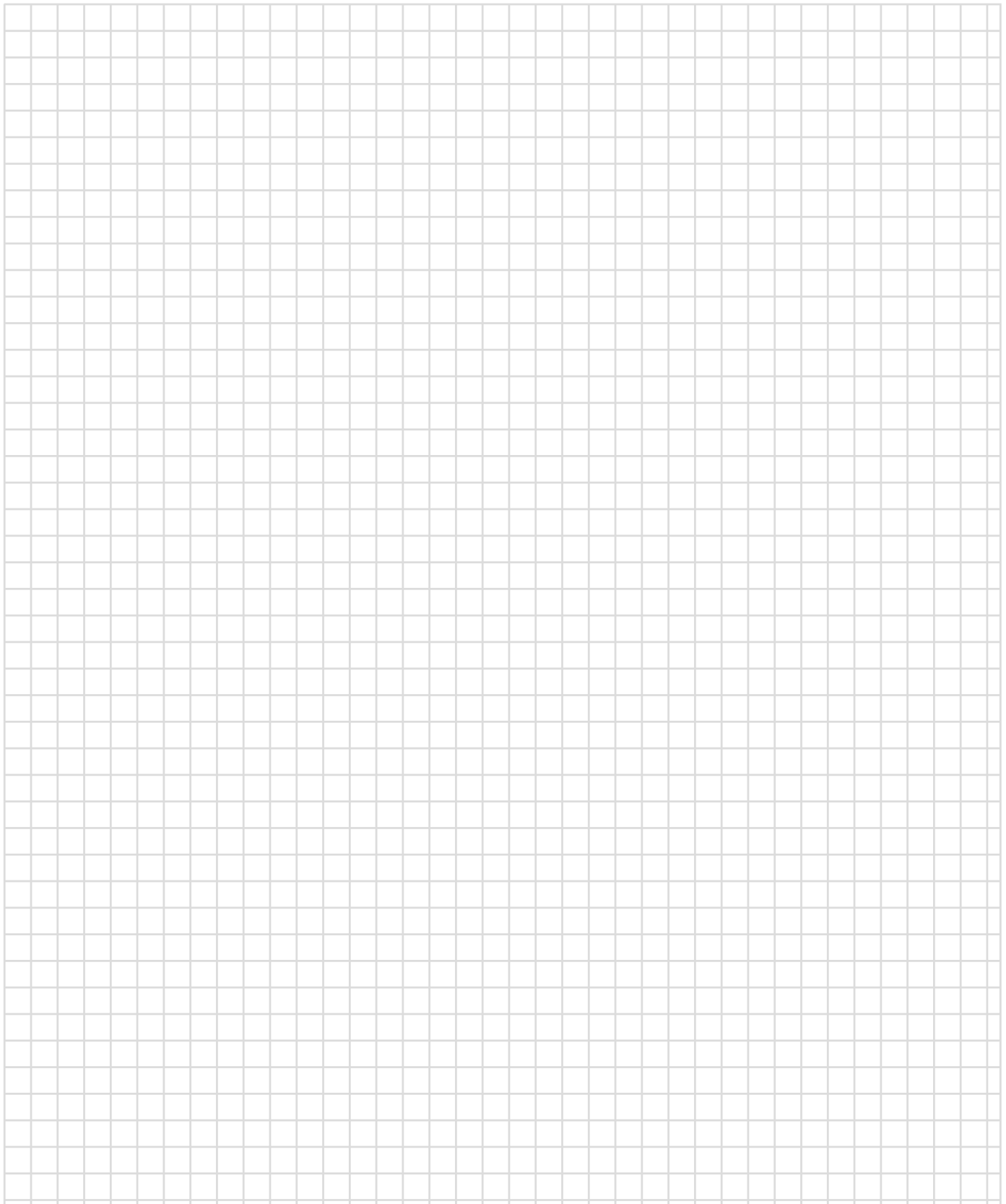
Solution.



1-5

Name the force system in which all the forces are on a single plane and passing through a common point.

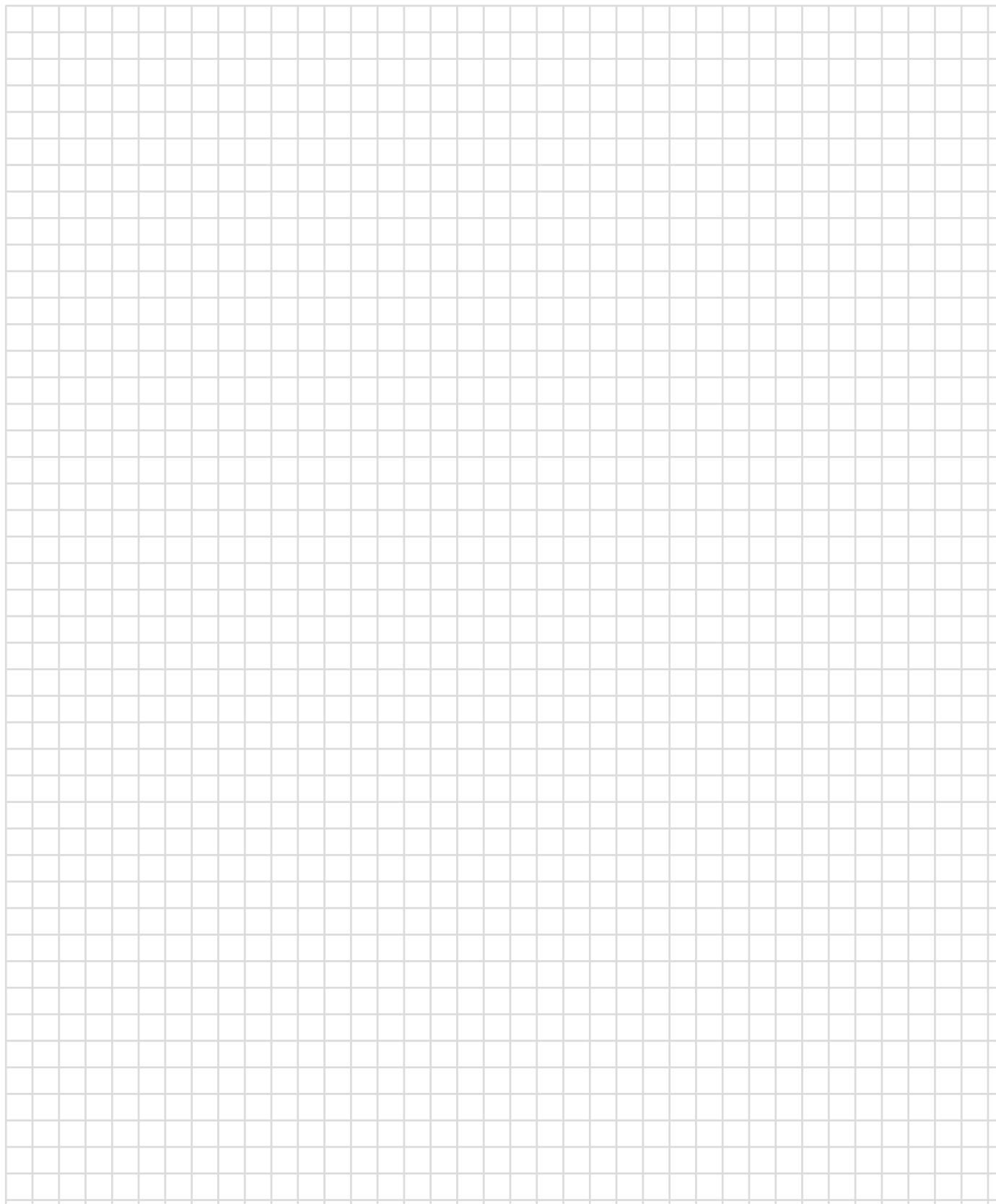
Solution.



1-13

What is the mass in slugs of a body weighing 500 lb?

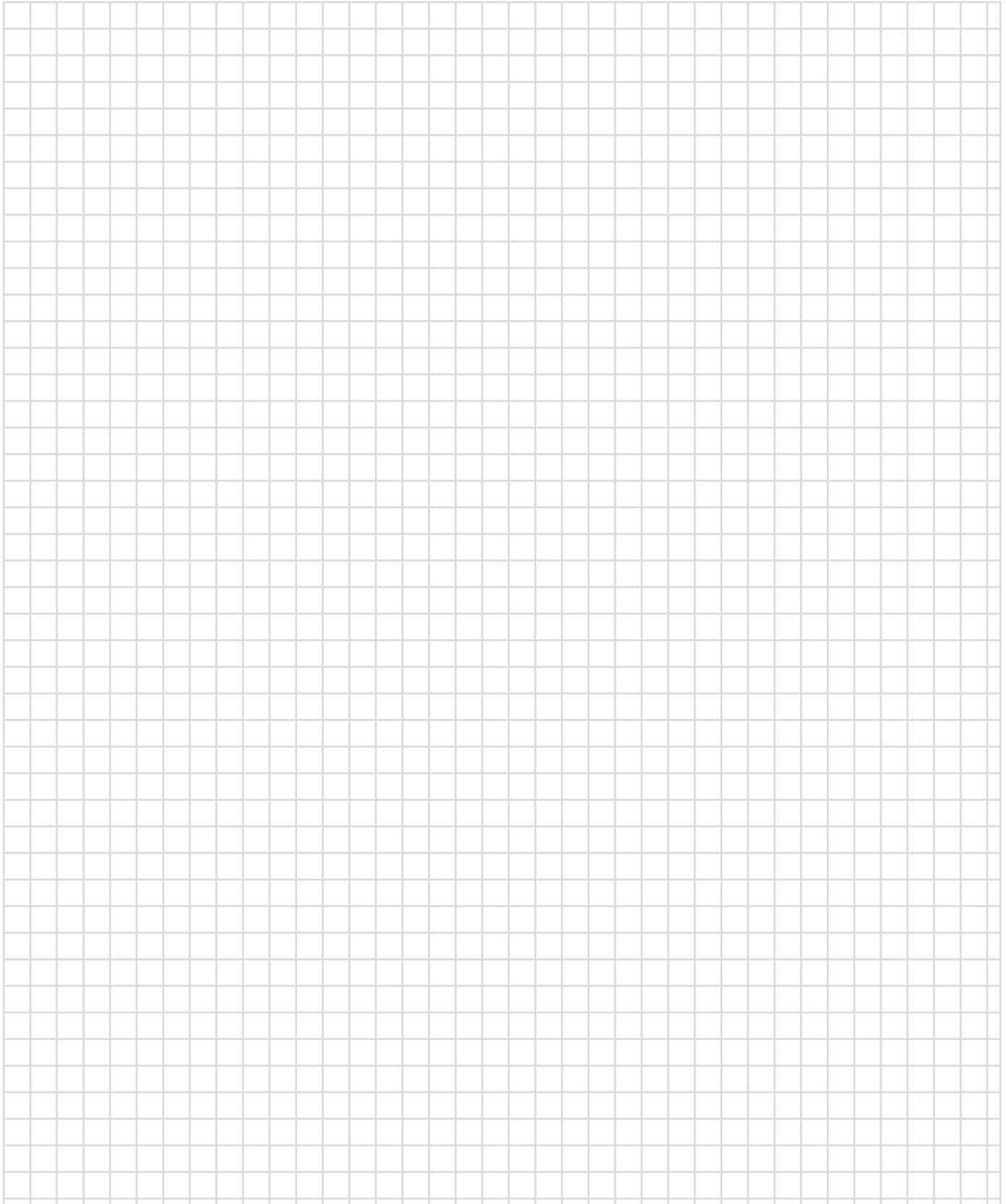
Solution.



1-18

An astronaut weighs 150 lb on the surface of the earth. Determine (a) the mass of the astronaut in slugs, and (b) his weight in pounds on the moon, where the gravitational acceleration is 5.30 ft/s^2 . What is his mass on the moon?

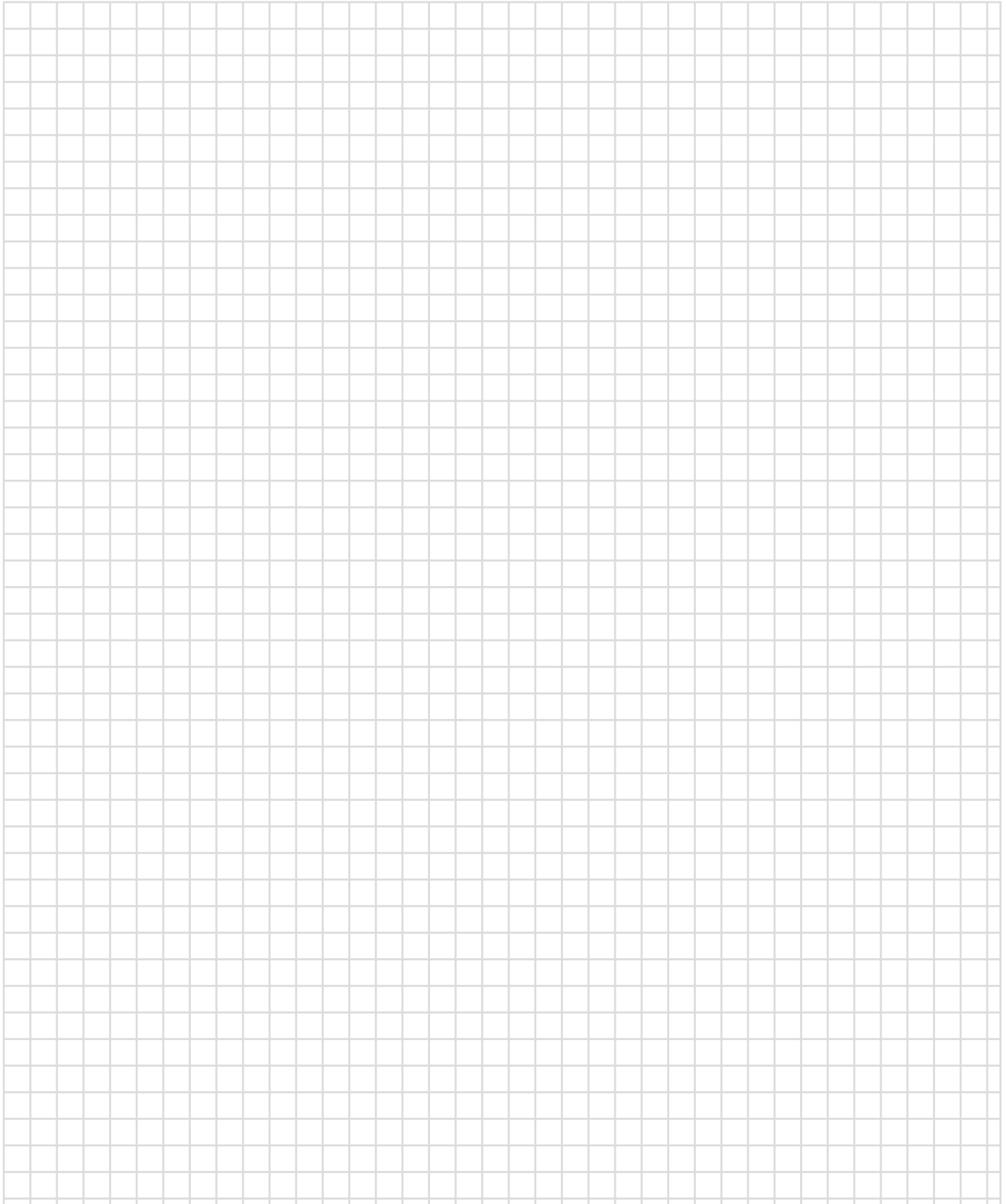
Solution.



1-27

Use the formula $A = \pi r^2$ for circular areas to find the area of a circular lot of 268 ft diameter in acres (1 acre = 43,560 ft²).

Solution.



1-28

The vertical distance y traveled by a freely falling body can be computed from the formula shown where v_0 is the initial velocity, g is the gravitational acceleration, and t is the time of falling. Find the distance traveled by a falling body with an initial downward velocity of 2.25 m/s for 30 s.

Solution.

$$y = v_0 t + \frac{1}{2} g t^2$$