

Mastering Physics Prerequisites

Unit Conversion

Problems 6-10

6. The cost of pea gravel for landscaping \$5.99 for a bag that has a volume of a half of a cubic foot. A landscaper needs to cover a driveway that is 10 feet wide by 30 feet long to a depth of 1.0 inches with pea gravel.

- How many bags of gravel will be needed?
- What is the cost of this volume of pea gravel?



7. A room is 10 feet by 12 feet. The homeowner is going to carpet the room with a grade of carpeting that costs \$23/yd².

- What is the area of the room in units of square yards?
- How much will the carpet cost to cover the floor?

8. Light travels at a speed of 300,000,000 m/sec. Express this speed in units of mph. There are 3.28 feet in one meter and 5280 feet in one mile.

9. A Tesla that is moving at a constant speed of 60 mph under normal conditions burns about 17,500 joules of energy per second. This is 17,500 Watts.

- Express this power in units of kJ/sec.
- Express this power in units of horsepower.

10. A typical firehose delivers 150 gallons per minute.

- Convert the units of this flow rate to liters per second.
- Convert the units of this flow rate to cubic feet per minute.
- Convert the units of this flow rate to barrels per hour.