GMD-1a Practice Assessment

1. Explain in words why the volume of a cylinder is equal to $\frac{1}{3}\*π\*radius^{2}\*height$. You may draw pictures to accompany your written answer.

GMD-3A

1. To the nearest tenth, find the diameter of a 6-inch tall cylinder that has a volume of 1200 cubic inches.

MG1a

1. Fish are being placed in an aquarium. Each fish of this particular species needs approximately 160 in3 per fish in order to have enough room to breathe, feed, and live comfortably. If you want to place 4 of these fish in an aquarium, sketch out the dimensions of a suitable, reasonably sized aquarium with less than 1000 in3 total volume.

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MG2a

1. A strange rock has appeared at your lab and you want to determine its origin. It closely resembles a large marble or bouncy ball and has a 8 cm diameter. A scale shows it has a mass of 435 grams. The table below shows average densities of rocks based on their origin. Where did the rock most likely originate? Show the calculations that lead to your conclusion.

|  |  |
| --- | --- |
| Origin | Density (g/cm3) |
| Surface | 1.99 |
| Continental Shelf | 2.57 |
| Ocean floor | 3.48 |
| Volcanic | 1.62 |

SRT-C8a

1. From the window of her upstairs bedroom 25 feet above the ground, Alice spots a cute baby rabbit in the yard below. The angle of depression from Alice to the rabbit is 32°. How far along the ground is the rabbit from the house?

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