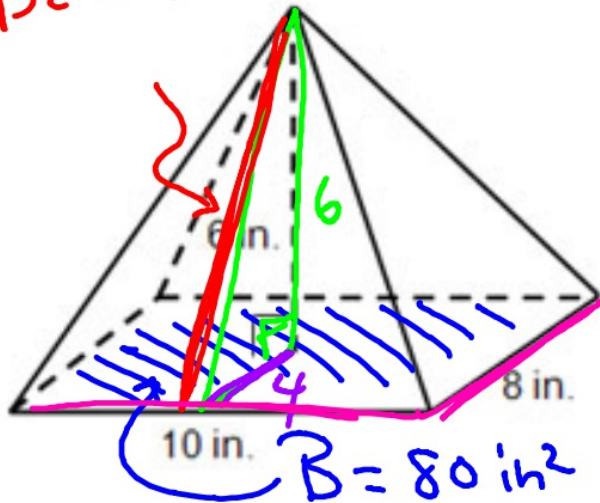


Good morning: warm up

$$209.78 \text{ in}^2$$

Find the volume and surface area of this rectangular pyramid.

$$\sqrt{52} \approx 7.21$$



$$\bullet \text{ SA} = \text{base} + \text{lateral area}$$
$$\bullet \left(\frac{1}{2}\right) (\text{base perimeter}) (\text{slant height})$$

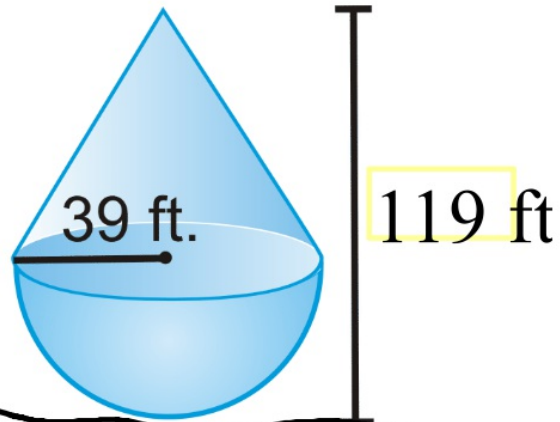
$$V = \frac{1}{3} B \cdot h = \frac{1}{3} (80) (6) = 160 \text{ in}^3$$

Retakes in DS: get a pass!!
next assessment: Tuesday

Formula Quiz Monday (100% scale)

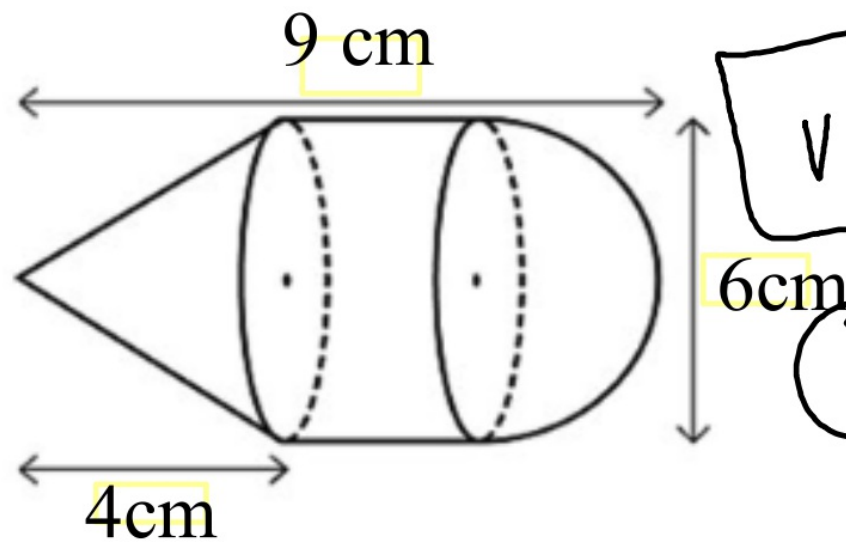
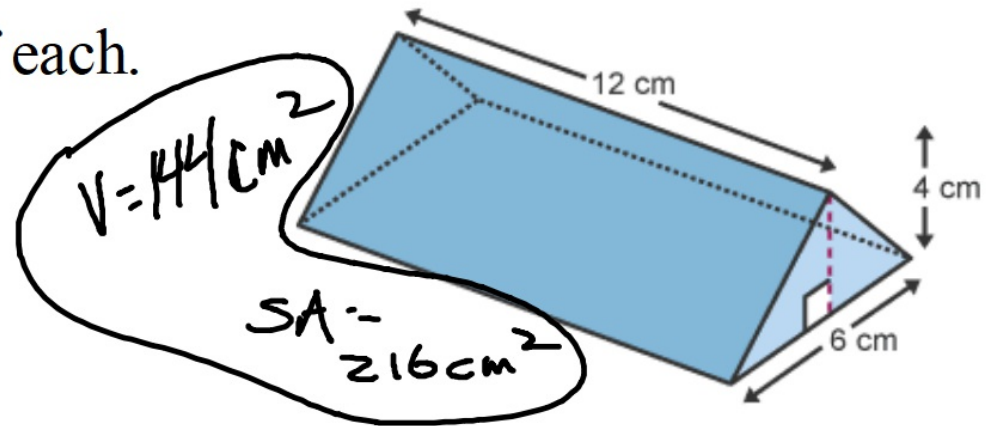
visibly random grouping

Find the exact volume and SA of each.



$$V = 41574\pi \text{ ft}^3$$

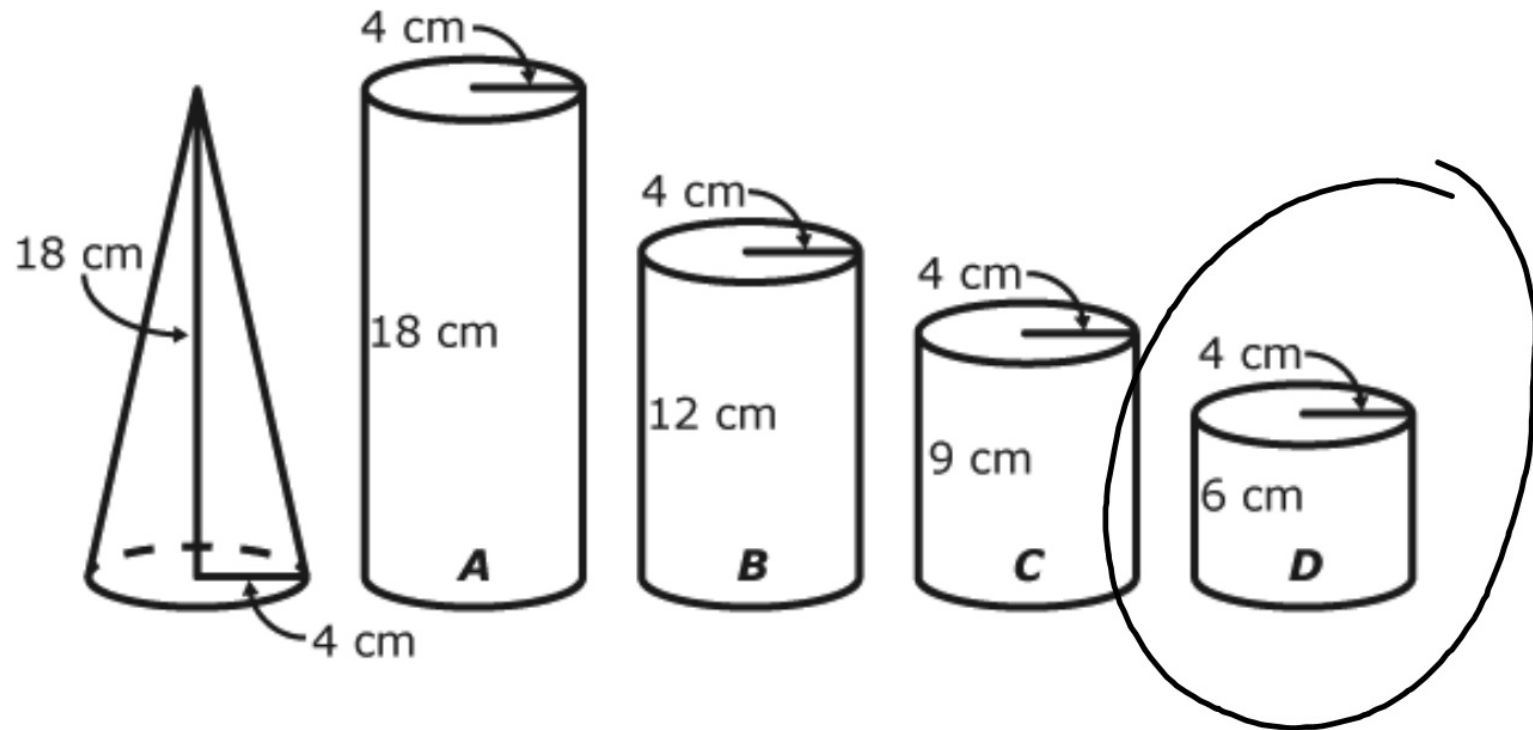
$$SA = 6513 \text{ ft}^2$$



$$V = 48\pi \text{ cm}^3$$

$$SA = 45 \text{ cm}^2$$

Which cylinder is equivalent in volume to the cone?



Circle circumference ✓

Circle area ✓

Cylinder volume ✓

Cylinder surface area ✓

Cone volume ✓

Cone surface area ✓

Pyramid volume ✓

Prism volume ✓

Pyramid surface area ✓

Sphere volume ✓

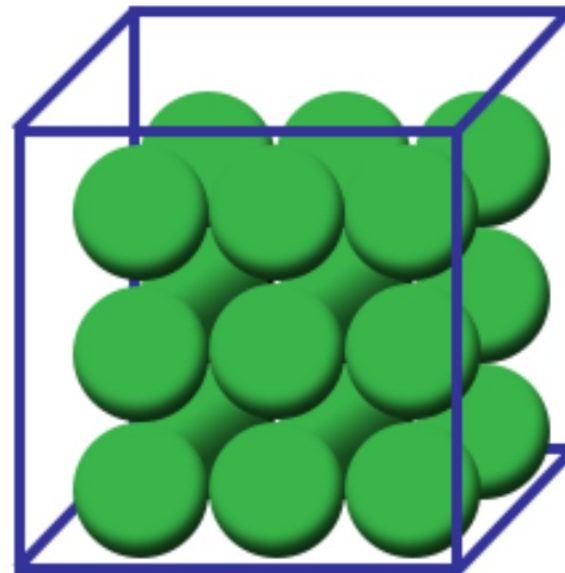
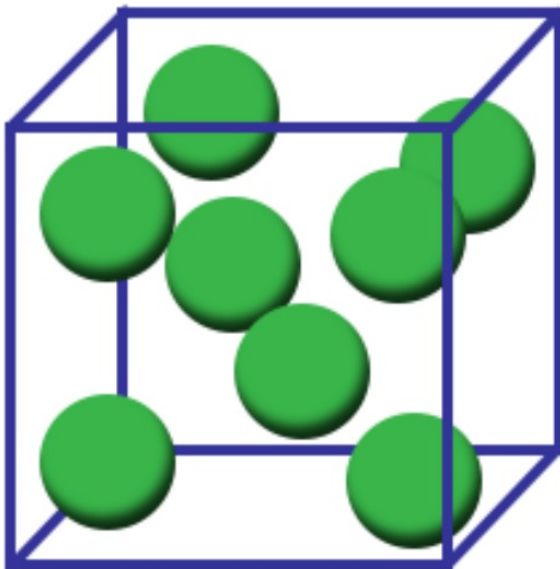
Sphere surface area ✓

Density 🤔

tested

not yet tested

Density

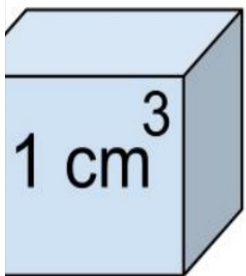
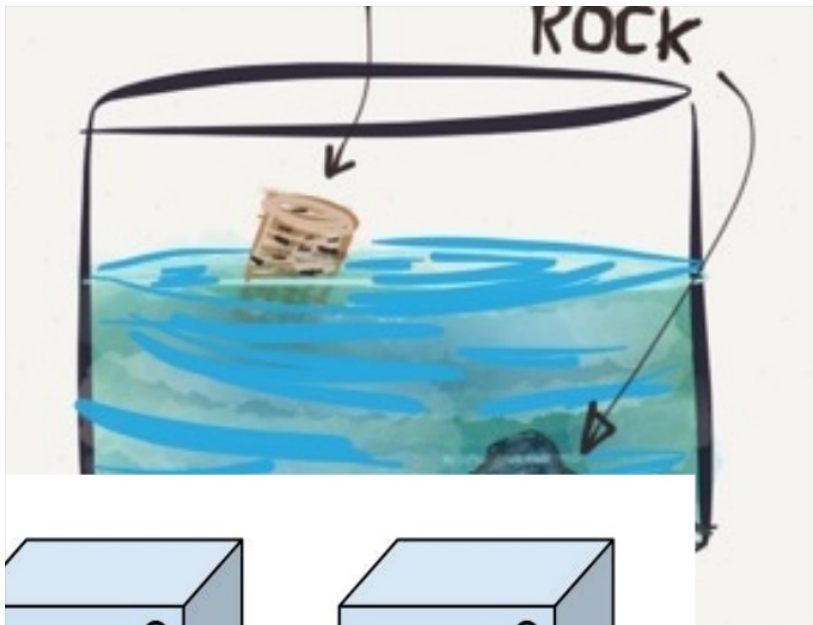


TheEngineeringMindset.com

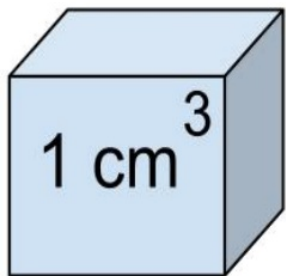
$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

or, amount of stuff in a fixed space

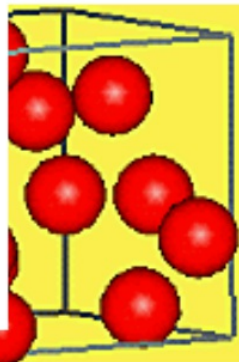
$$D = \frac{M}{V}$$



Diamond
3.5g

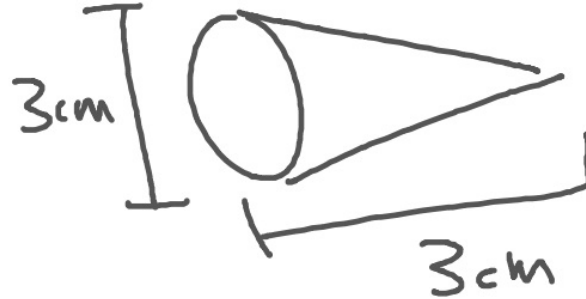


Iron
7.8g



A small bit of a heavy rock has broken off. The piece is in the shape of a cone and measures 3 cm long and is 3 cm wide at its base. Placed on a scale, the mass is determined to be 14.8 grams. What type of rock is it most likely, based on the table below?

Type	Density (g/cm ³)
Shale	0.5
Granite	3.7
<u>Sandstone</u>	2.1
Diamond	4.8



$$V = \frac{1}{3} \pi r^2 \cdot h$$

$$= \frac{1}{3} \pi (1.5)^2 (3)$$

$$V = 7.07 \text{ cm}^3$$

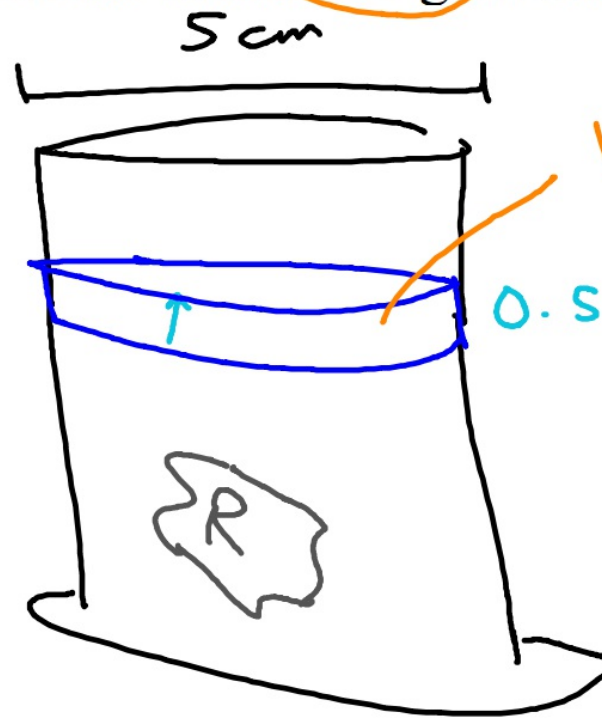
$$D = \frac{M}{V} = \frac{14.8 \text{ g}}{7.07 \text{ cm}^3}$$

$$= \underline{2.1 \text{ g/cm}^3}$$

Another rock has come to your desk. Its shape is...weird. You put it into a graduated cylinder with diameter 5 cm and the water level rises 0.5 cm. On a scale, the rock has mass 36.3 g. What kind of rock is it most likely?

$$D = \frac{M}{V} = \frac{36.3 \text{ g}}{9.81} \approx 3.69 \dots$$

Type	Density (g/cm ³)
Shale	0.5
Granite	3.7
Sandstone	2.1
Diamond	4.8



$$V = \pi (2.5)^2 (0.5)$$

$$V = 9.81 \text{ cm}^3$$

My family is from Bangladesh
Without looking it up, how many people live
in this country?

163,190,720



Area	
• Total	147,570 ^[5] km ² (56,980 sq mi) (92nd)
• Water (%)	6.4

Population	
• 2016 estimate	162,951,560 ^[6] (8th)
• 2011 census	149,772,364 ^[7] (8th)
• Density	1,106/km ² (2,864.5/sq mi) (10th)



56,977 sq mi

164,700,000 people

2865 people/mi²



59,425 sq mi

10,430,000 people

165 people/mi²

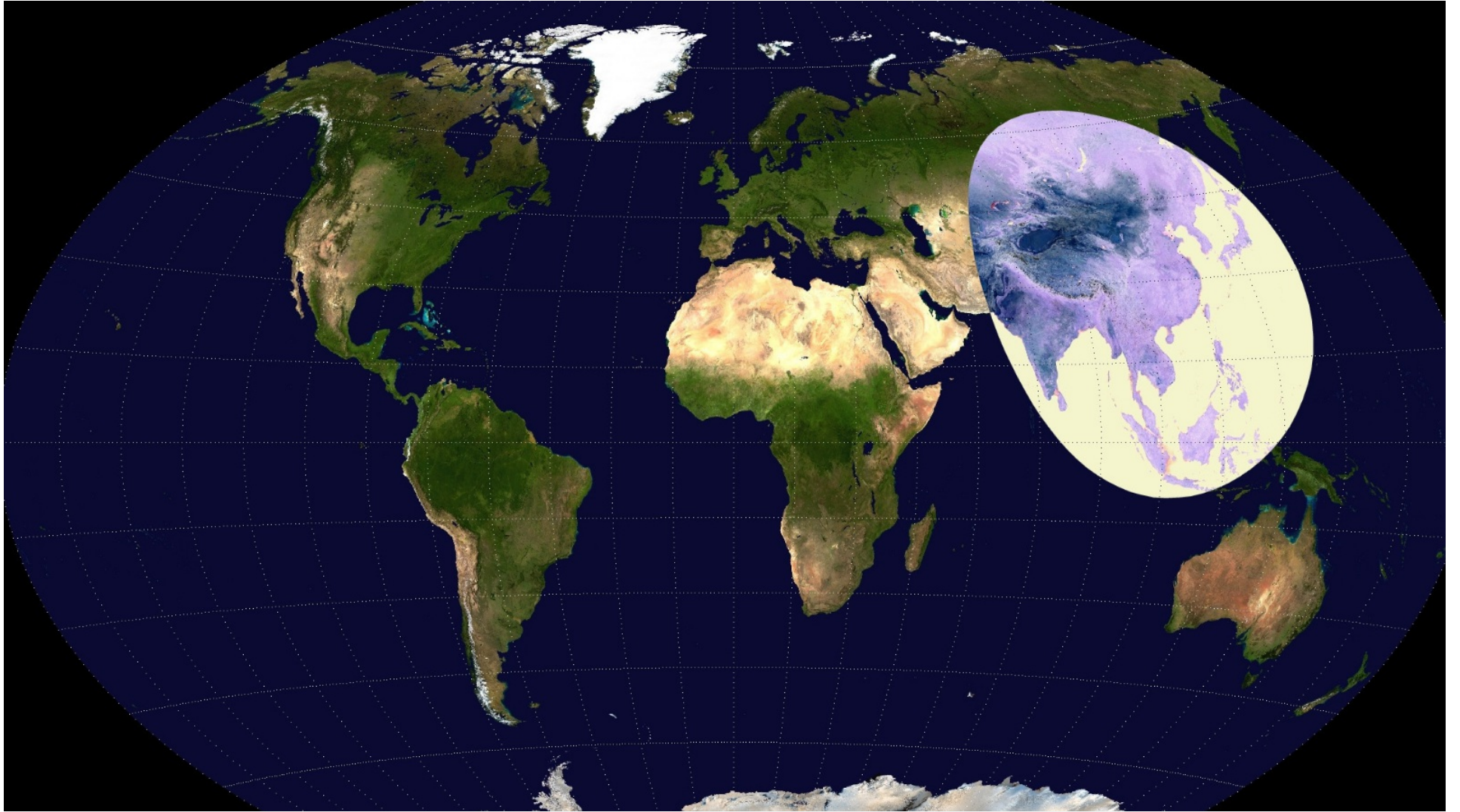


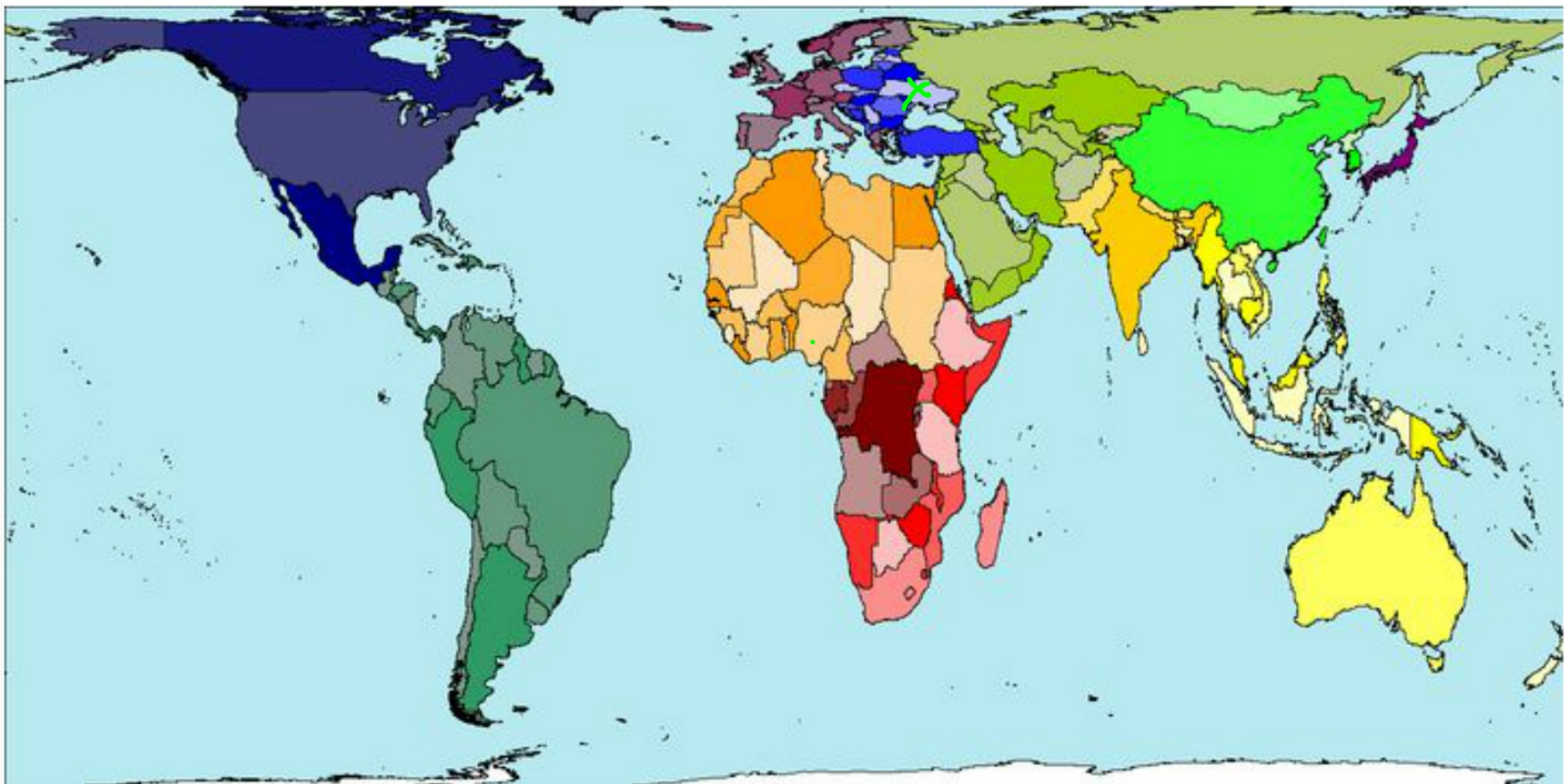
**There are more people living inside
this circle than outside of it.**



Mongolia
3 people /sq
mile

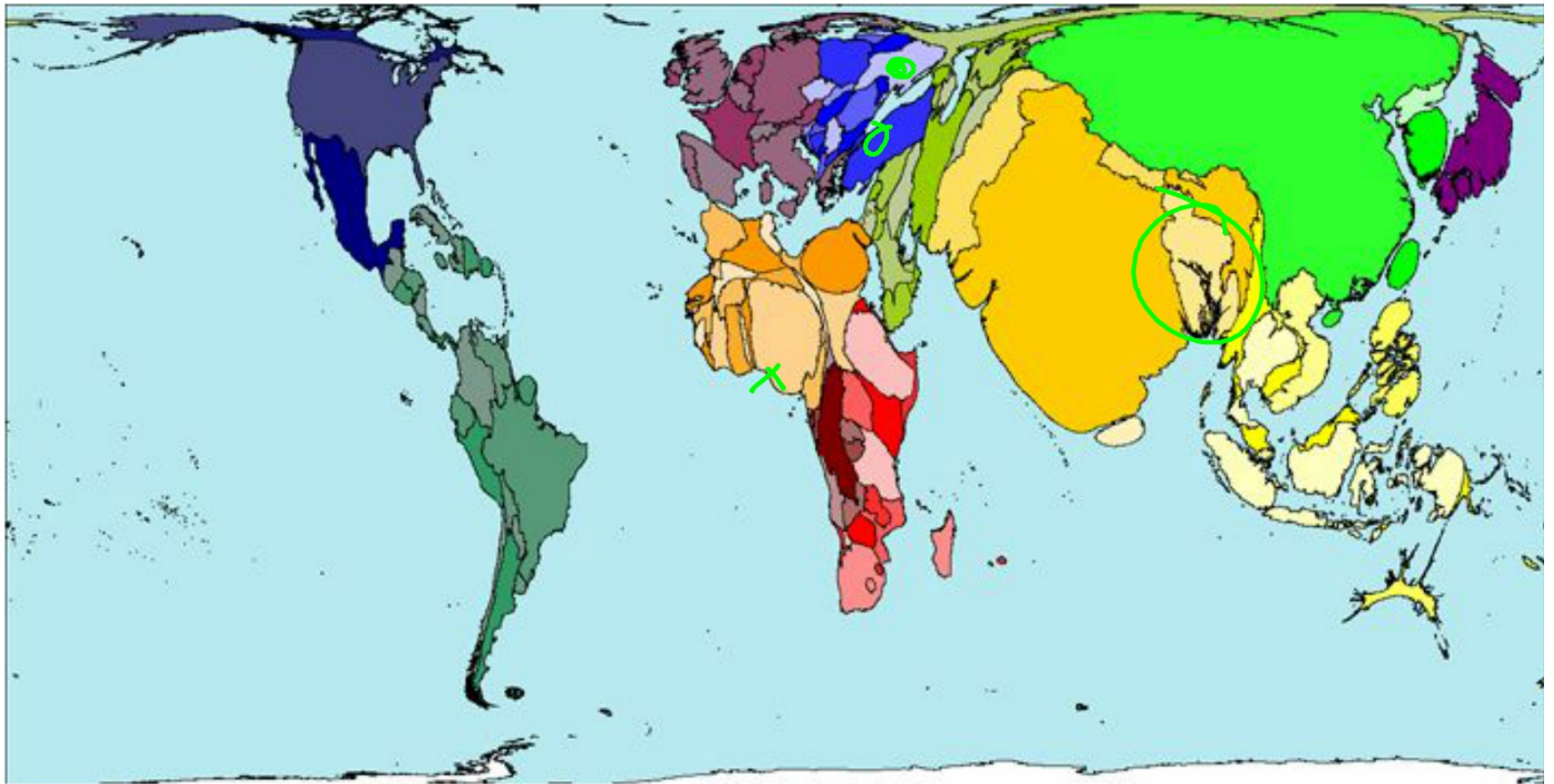
There are more people living inside
this circle than outside of it.





Land Area





Population



Country	Population	Area (mi ²)	Density (per mi ²)
Belize	323,645	= 8867	36.5
Uzbekistan	32,979,000	180,213	183
Angola	25,790,000	÷ 481,400	54

(nearest whole #)

$$D = \frac{\text{Popl}}{\text{Area}}$$

$$\frac{183}{1} = \frac{32,979,000}{x}$$

$$183x = 32,979,000$$

$$x =$$



HW

p 522 #9-14

formulas quiz: Monday (graded traditionally, 100% scale)

next assess: Tuesday