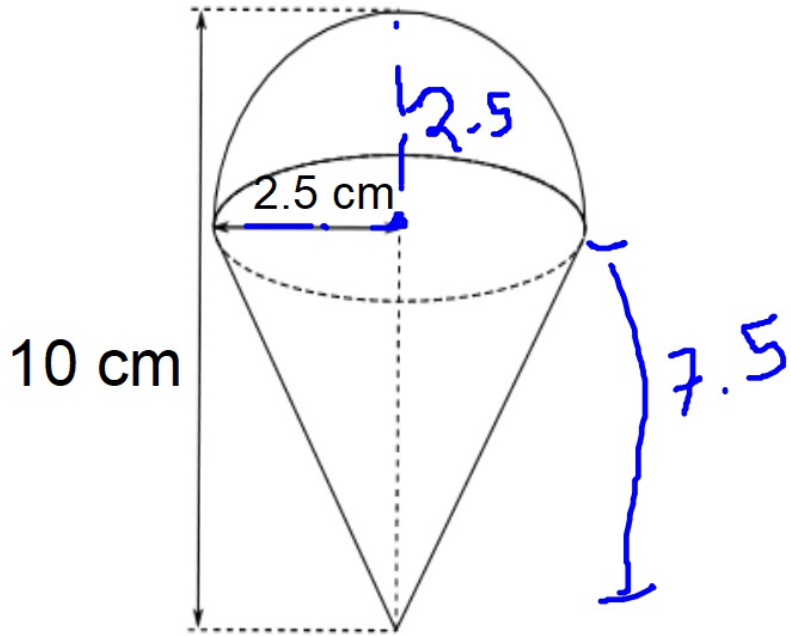
Good morning: warm up in notes

Find the total volume of the ice-cream cone to the nearest hundredth.

$V_{HS} = \frac{4}{3}\pi r^3 \cdot \frac{1}{2}$

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

$V = 81.81\ cm^3$



Reminders:
tutoring tomorrow 4-5p
assessment Weds!

250 mL of water are frozen into slush and reshaped into a spherical snowball. What is the approximate diameter of the snowball? (1 mL = $1cm^3$)

$V = \frac{4}{3}\pi r^3 = \frac{250 cm^3}{\pi}$

$\frac{4}{3} \cdot r^3 = \frac{79.577}{4/3}$

$\sqrt[3]{r^3} = \sqrt[3]{59.683}$

$r = 3.908$

$x \quad 2$

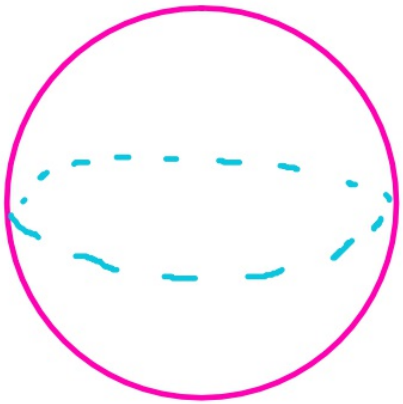
7.82 cm

$\sqrt{x^2} = x$

$\sqrt[3]{x^3} = x$

$\sqrt[n]{x^n} = x$

Now find the surface area of the snowball.



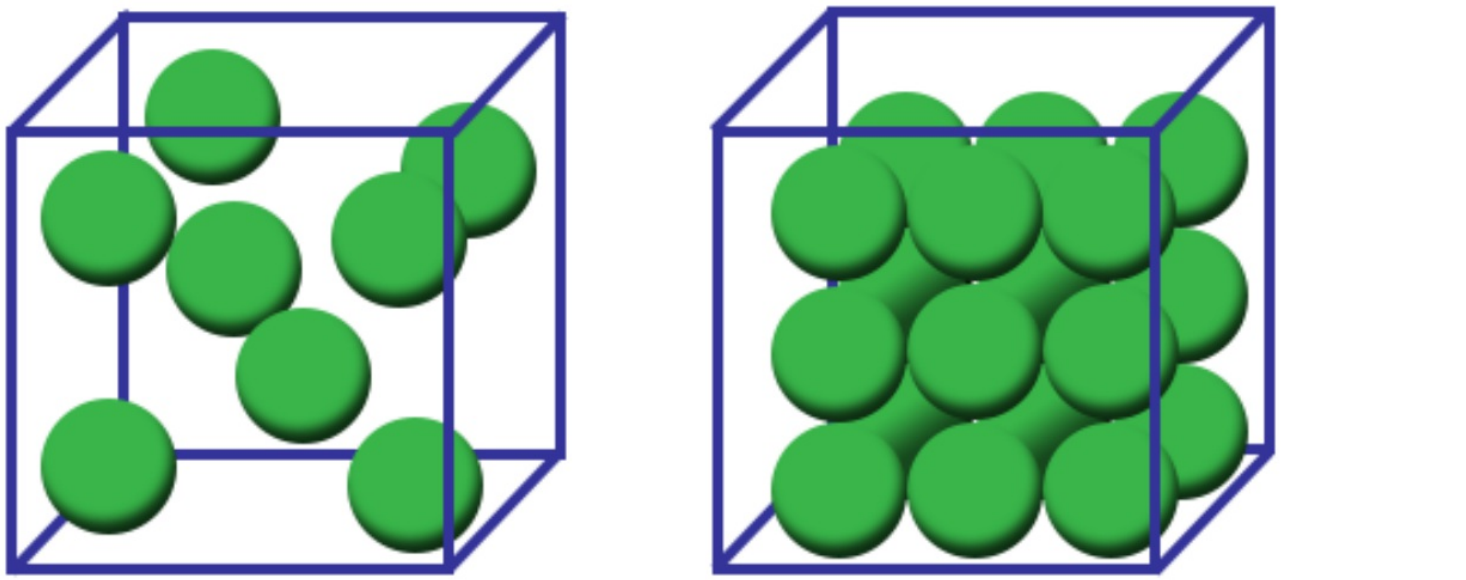
7.82 cm

$SA = 4\pi r^2$

$4\pi(3.91)^2$

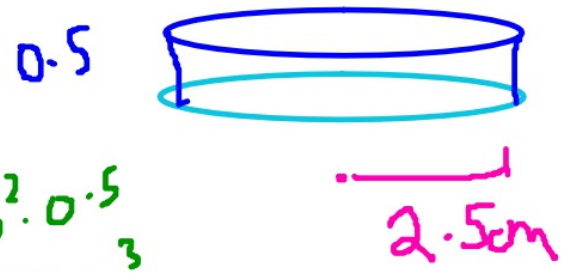
$= 192.12 \text{ cm}^2$

Density



TheEngineeringMindset.com

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?



$V = \pi \cdot 2.5^2 \cdot 0.5$
$= 9.82 cm^3$

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

$D = \frac{36.3 g}{9.82}$

$D = 3.7$

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

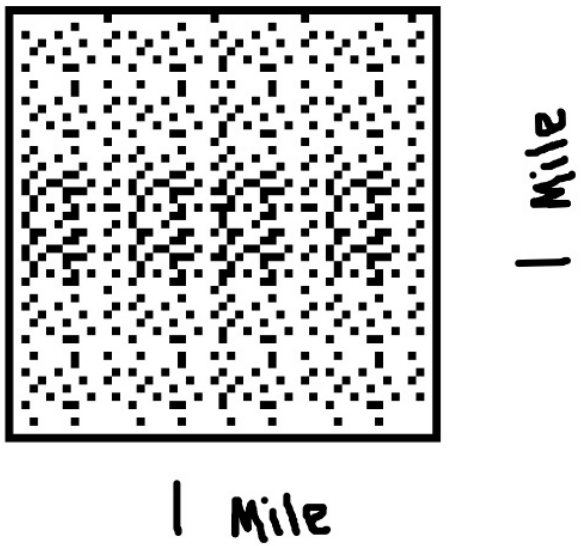
My family originates from Bangladesh.

Here's some data.
How many people live in Bangladesh?

Area	
• Total	147,570[6] km² (56,980 sq mi) (92nd)
• Water (%)	6.4
Population	
• 2016 estimate	162,951,560[7] (8th)
• 2011 census	149,772,364[8] (8th)
• Density	1,106/km² (2,864.5/sq mi) (10th)
GDP (PPP)	2018 estimate
• Total	$748.811 billion[9] (31st)
• Per capita	$4,541[9] (139th)
GDP (nominal)	2018 estimate
• Total	$273.618 billion [9] (43rd)
• Per capita	$1,660[9] (148th)
Gini (2010)	32.1[10] medium
HDI (2015)	▲ 0.579[11] medium · 139th
Currency	Taka (৳) (BDT)
Time zone	BST (UTC+6)
Date format	dd-mm-yyyy BS দদ-মম-বববব (CE–594)
Drives on the	left

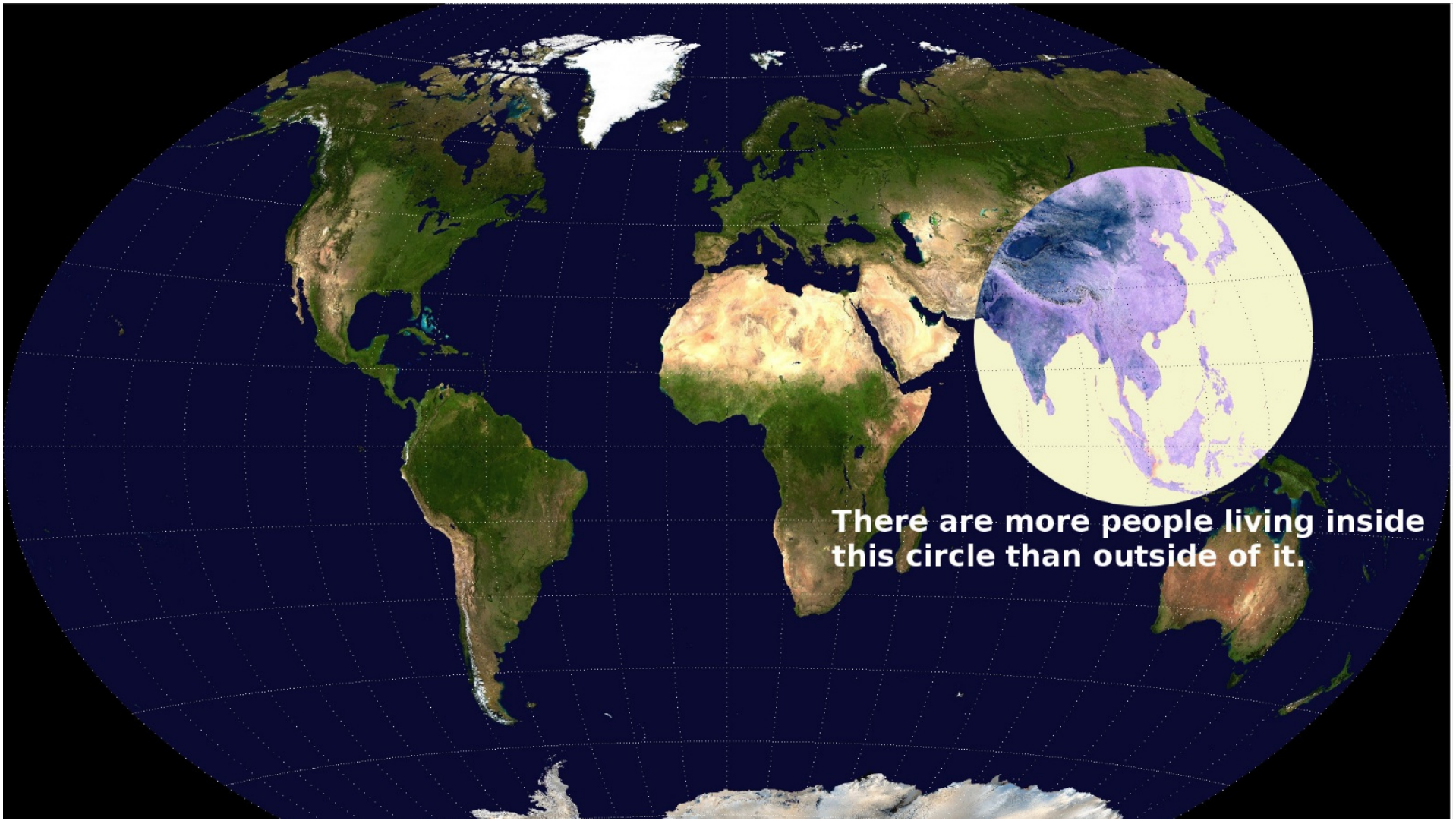
How densely populated is 2600 people/square mile?

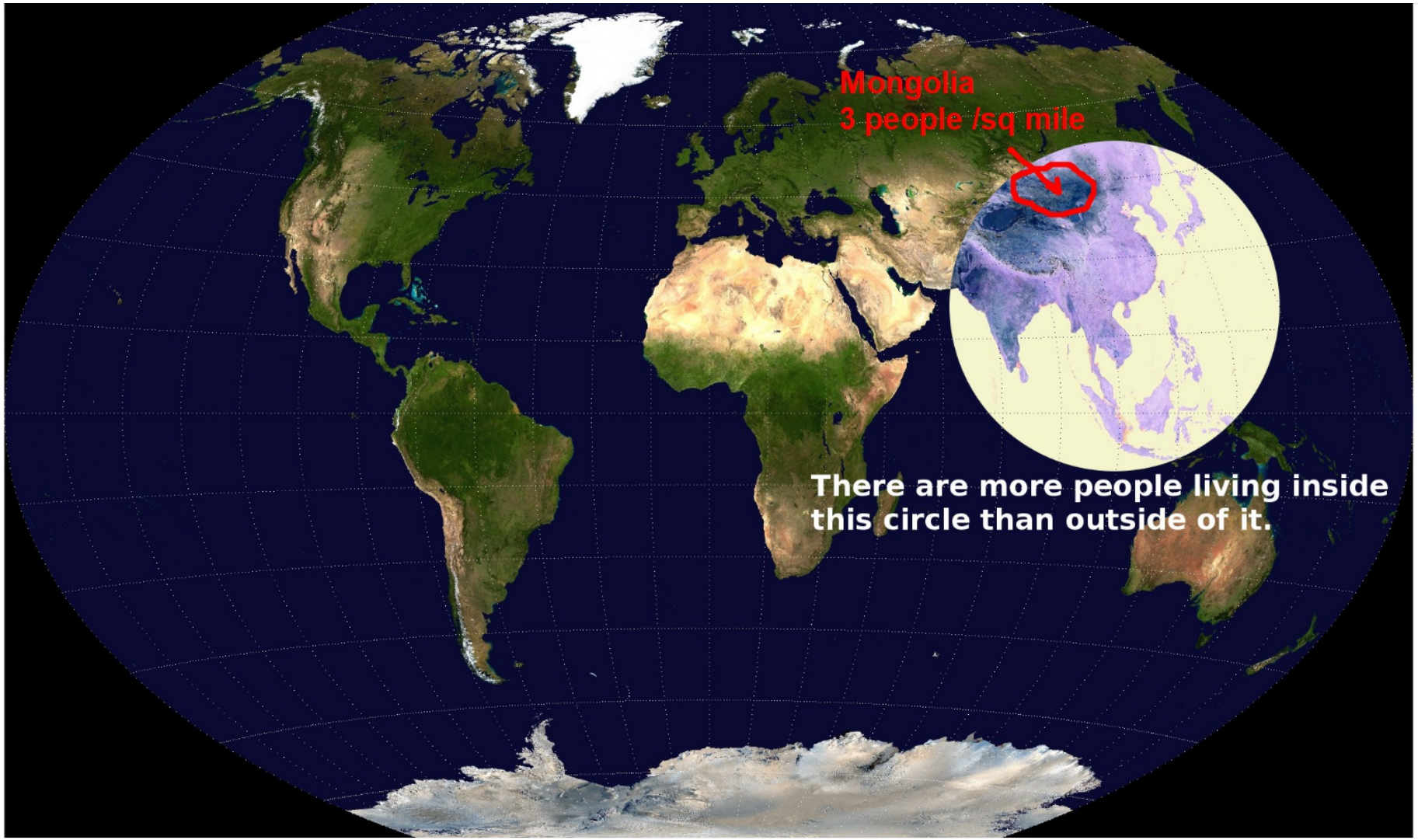
there are 2600 dots in this box

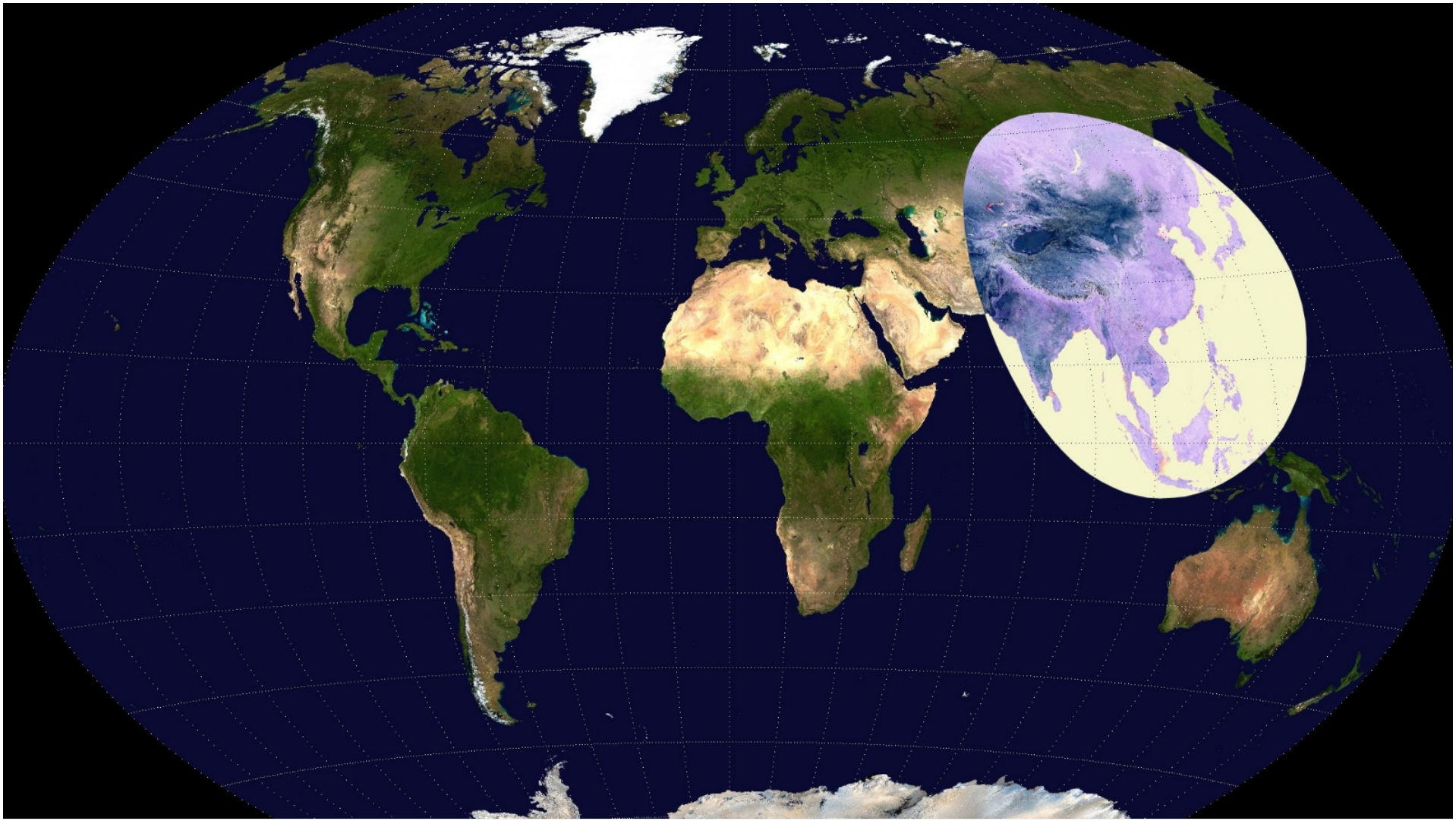


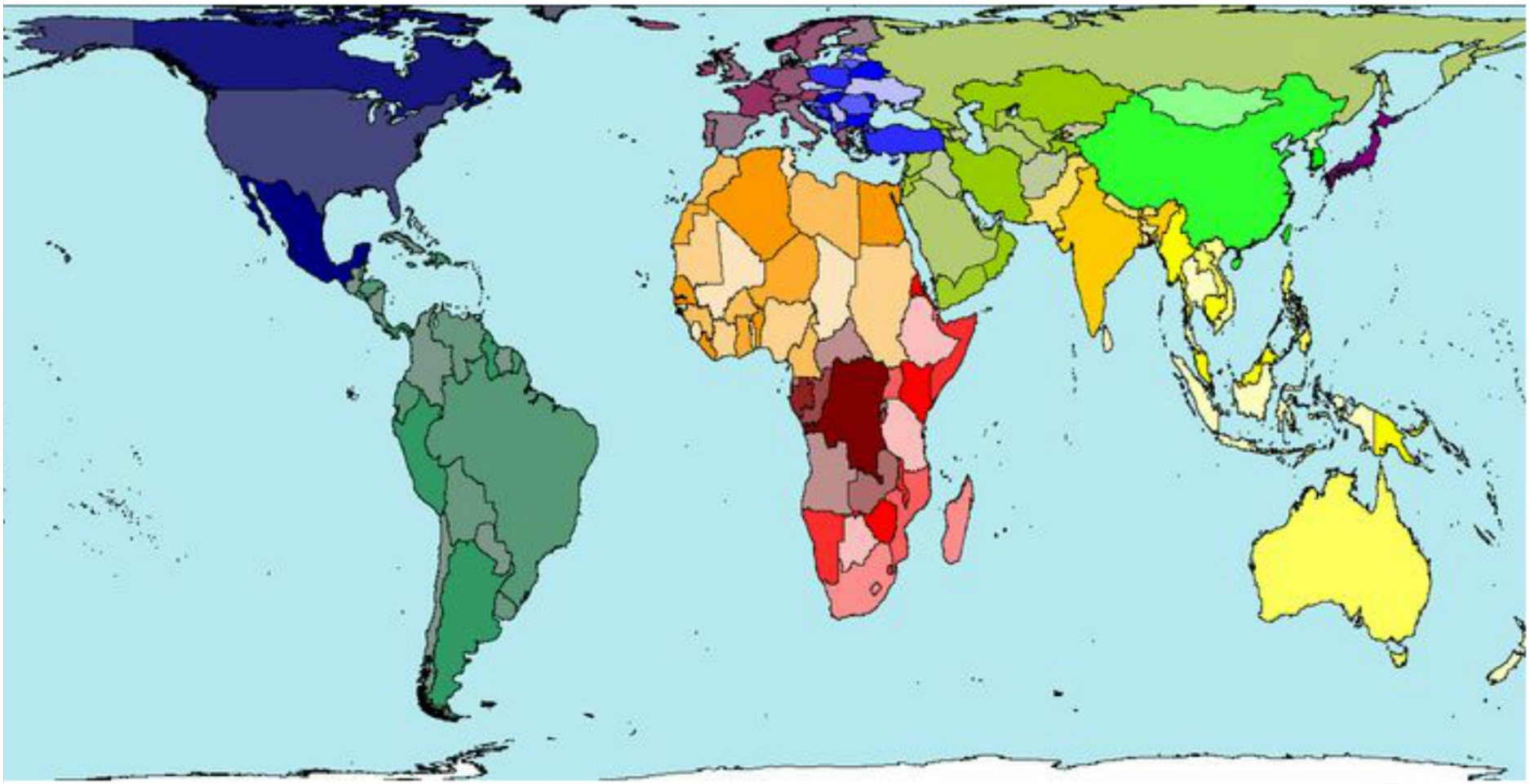
there are 620 here

(approx. density of Hamilton Co)

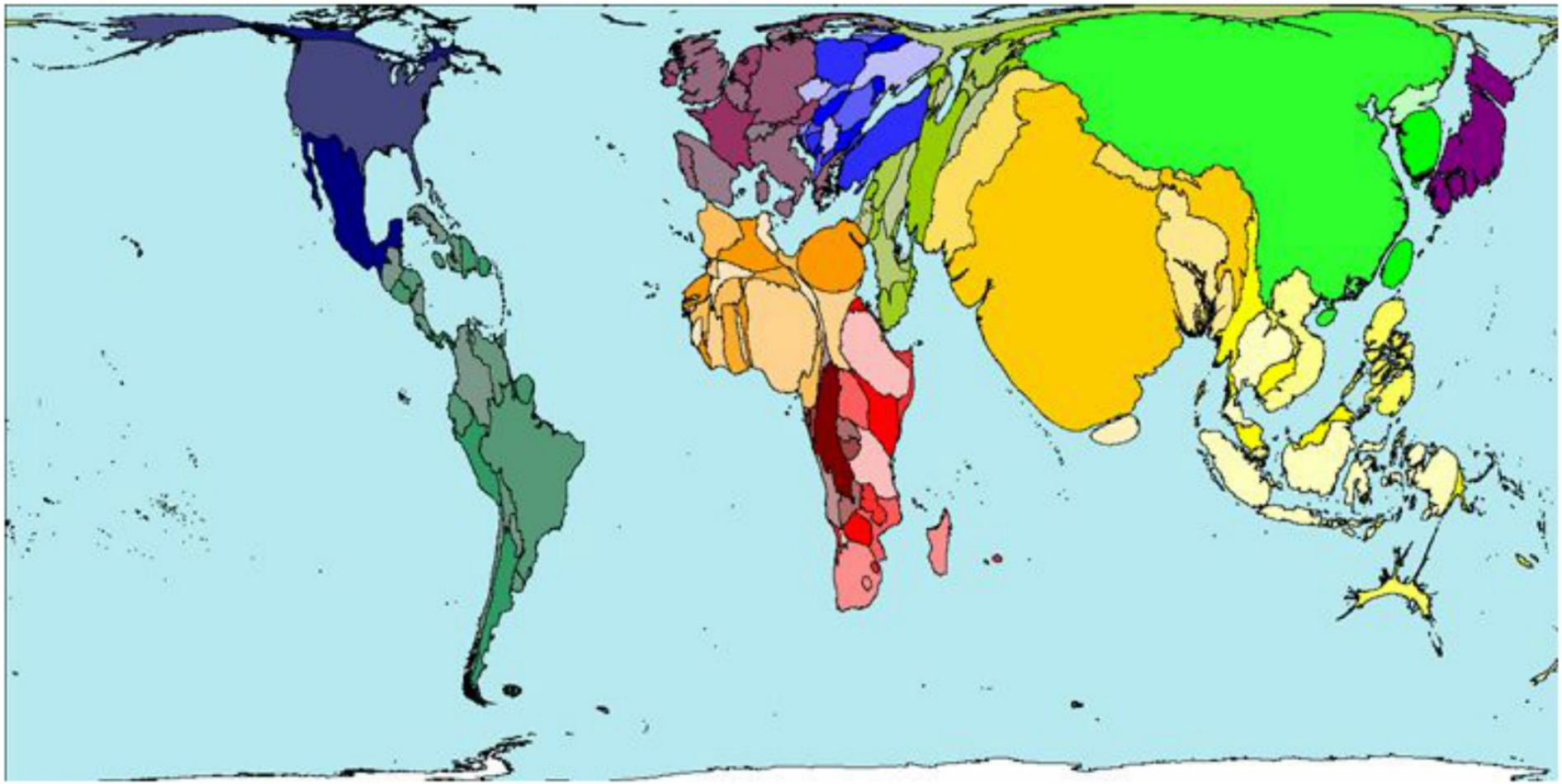

There are more people living inside
this circle than outside of it.


Mongolia
3 people /sq mile
There are more people living inside
this circle than outside of it.





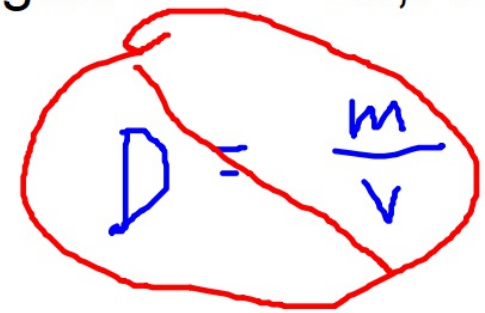
Land Area



Population

Find each missing value.

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	53.57



$D = \frac{ppl.}{Area}$

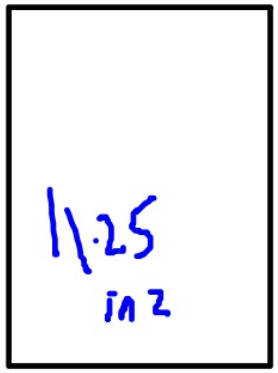
$36.5 = \frac{x}{8867}$

$183 = \frac{328...}{x}$

$\frac{ppl}{area} = D$

$\frac{ppl.}{dens.} = Are$

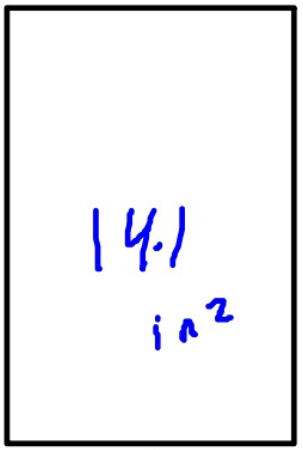
Two smartphones are on the market. Phone A has a 4.5" by 2.5" screen which has a screen resolution of 2560 by 1440 pixels. Phone B has a 4.7" by 3" screen with a 2560 by 1600 pixel resolution. Which phone has a higher pixel density (pixels per square inch)?



A

3,686,400 px
11.25

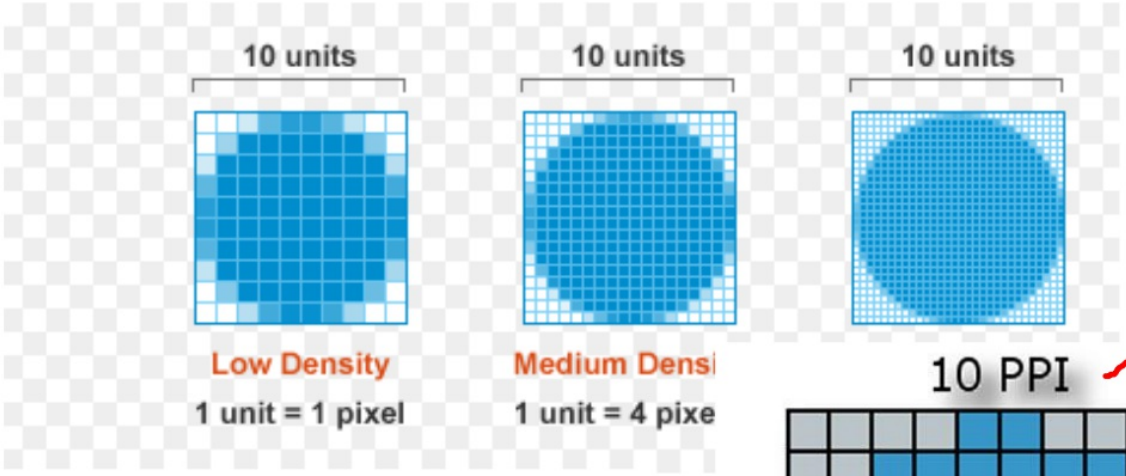
327,680

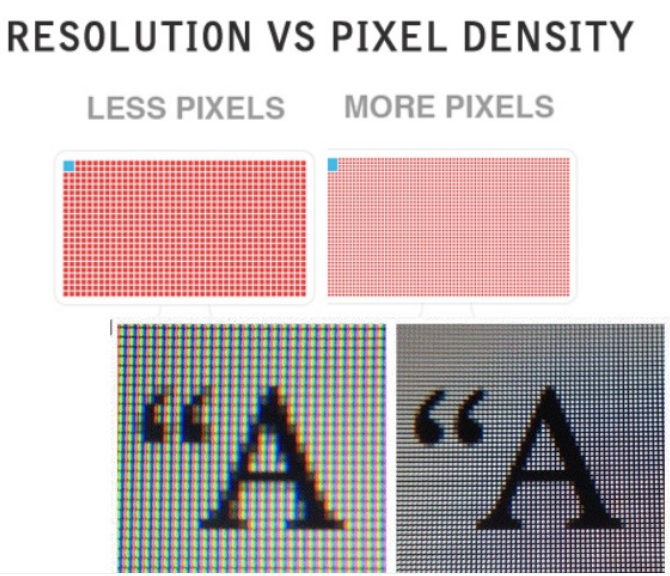


B

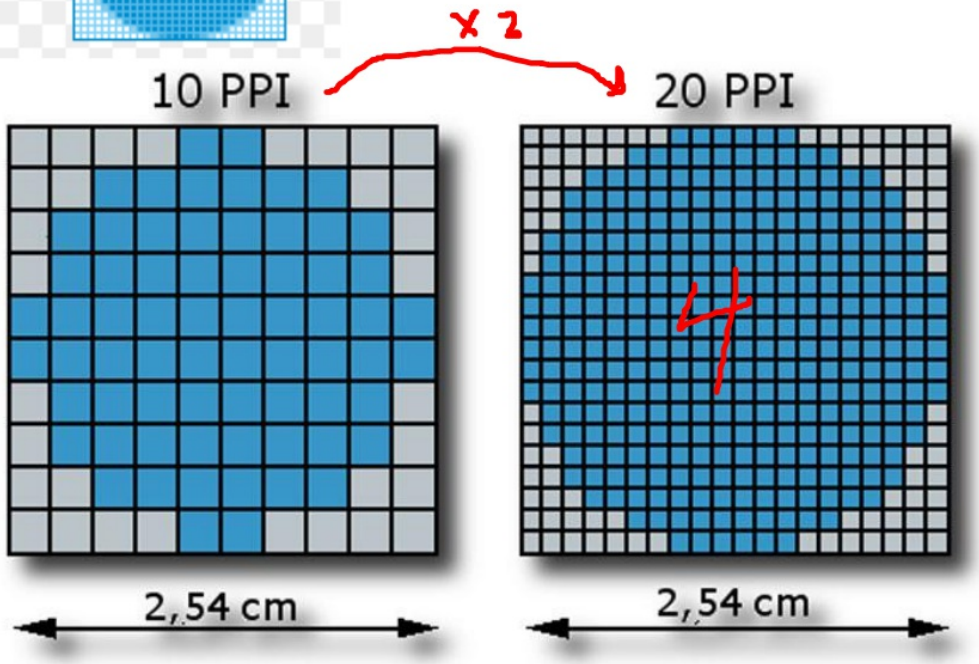
4,096,000
14.1

290,496


10 units
10 units
10 units
Low Density
1 unit = 1 pixel
Medium Densi
1 unit = 4 pixe


RESOLUTION VS PIXEL DENSITY
LESS PIXELS
MORE PIXELS


a a


x 2
10 PPI
20 PPI
4
2,54 cm
2,54 cm

Homework
do the practice assessment, check solutions online
assessment is Wednesday
keep studying formulas