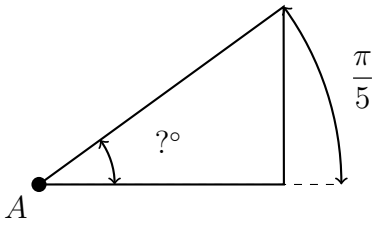
## 8.3 Data visualization

1. Do Now: Convert units of *radians* and *degrees* ($2\pi = 360°$, $\pi = 180°$).

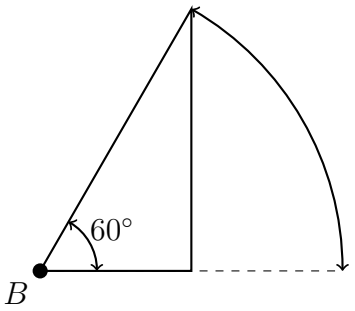
   Apply the appropriate formula.

   $d = r \times \dfrac{180}{\pi}$ $\qquad$ $r = d \times \dfrac{\pi}{180}$

   (a) $m\angle A = \dfrac{\pi}{5} =$ ? degrees

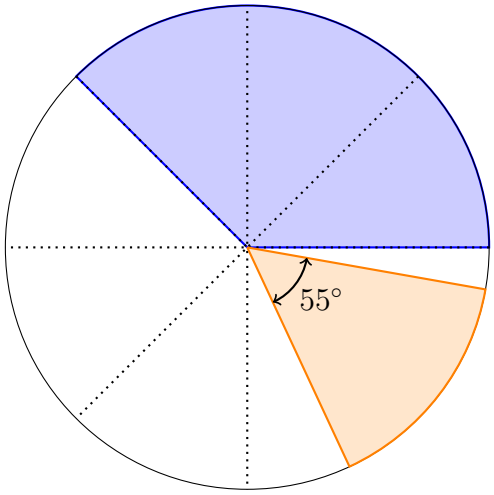
   (b) $m\angle B = 60° =$ ? radians (in terms of $\pi$)

2. Do Now: The *pie chart* below shows the proportion of two subsets of a population, one represented in blue and one in orange. Dotted lines divide the circle in eight equal sectors for reference.

   (a) Estimate the area of the blue sector as a fraction of the circle and as a decimal.

   (b) The central angle of the orange sector measures 55°. Find the fraction of circle's area shaded orange as a fraction and a decimal.

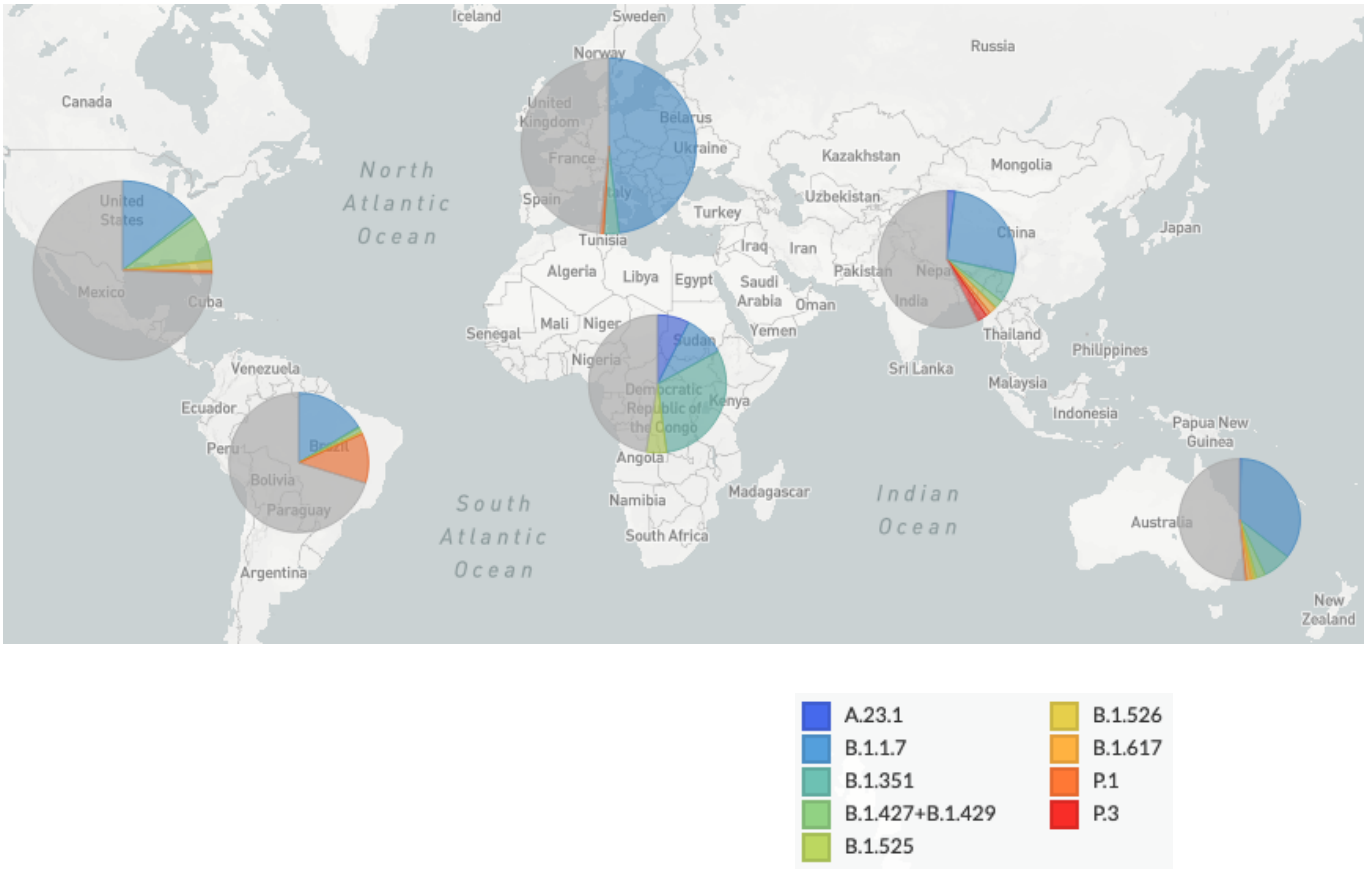


3. Lesson: We use circle sectors (pie charts) to communicate. This map shows the most important of the 3991 coronavirus variants as they evolve across the world.

   (a) In Europe, estimate the proportion of covid-19 identified as B.1.1.7 (light blue).

   (b) In South America, which is more prevalent B.1.1.7 or P.1 (light orange)?

   (c) In North America, what proportion of samples remain "unassigned" (gray)?



4. Groupwork: Compare the coronavirus variants across four states, regions, or countries.
   (a) Screenshot a pie chart into your quadrant. Write down the most prevalent variant.
   (b) Each student pastes a screenshot, name and region into each person's slide.
   (c) Discussion the differences and similarities in your group and agree on two or three sentences you will all write ("Discussion").

| Your name & location: | Member name & location: |
| --- | --- |
| Member name & location: | Member name & location: |

Discussion

5. Practice: Convert between units.

   General method: if $A = B$ multiply by $\frac{A}{B}$ or $\frac{B}{A}$. For example, $\pi$ radians $= 180$ degrees so
   $r = d \times \frac{\pi}{180}$ and $d = r \times \frac{180}{\pi}$

   (a) $40^\circ$ = ? radians

   (b) $\frac{\pi}{7}$ = ? degrees

   (c) 1 foot = 12 inches

   3.5 feet =

   (d) 54 inches =

   (e) 1 euro = 1.21 dollars

   20 euro =

   (f) 100 dollars =

   (g) 1 mile = 5,280 feet

   10,000 feet =

   (h) $\frac{1}{2}$ mile =