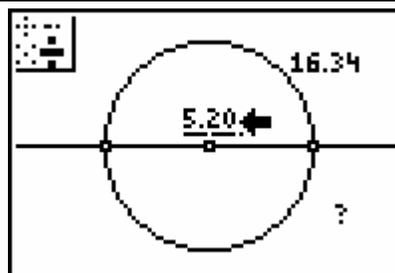


CABRI™ JR. ACTIVITY 11: EXPLORING THE DIAMETER AND CIRCUMFERENCE OF A CIRCLE

ACTIVITY OVERVIEW:

In this activity we will

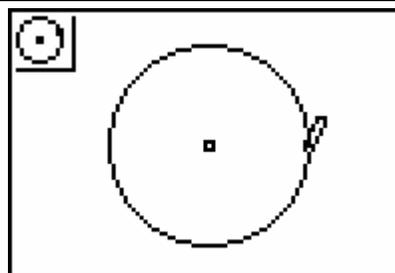
- Draw a circle
- Measure the diameter of the circle
- Measure the circumference of the circle
- Calculate the ratio of the circumference to the diameter



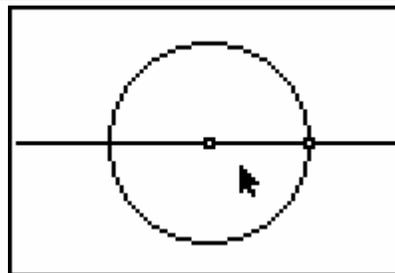
Press **[APPS]**. Move down to the CabriJr APP and press **[ENTER]**. Press **[Y=]** for the F1 menu and select **New**. (If asked to **Save changes?** press **[↩]** **[ENTER]** to choose “No.”)



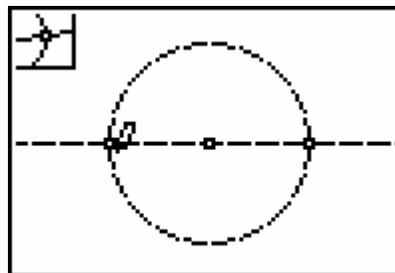
Press **[WINDOW]** for the F2 menu, move down to **Circle**, and press **[ENTER]**. Press **[ENTER]** to mark the center of the circle, then move the pencil to the desired radius, and press **[ENTER]** to complete the circle.



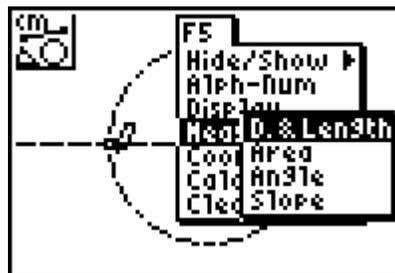
Draw a line through the two points which determined the circle. To do this, press **[WINDOW]** for the F2 menu, move to **Line**, then press **[ENTER]**. Move the pencil until the point on the circle is flashing, and press **[ENTER]**. Now move the pencil until the center of the circle is flashing, and press **[ENTER]**. Press **[CLEAR]** to exit the line drawing tool.



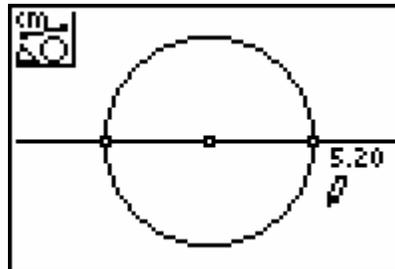
Press **[WINDOW]** for F2 and move to **Point**. Move to the right and down to select **Intersection**. Press **[ENTER]**. Move the pencil until both the line and the circle are flashing. Press **[ENTER]** to mark the point which is the intersection of the circle and the line. Now we have two points on the circle which are the endpoints of a diameter



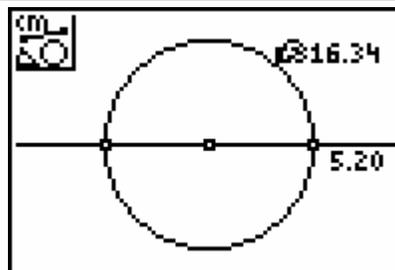
To measure the circle's diameter, press **GRAPH** for F5 and move down and right to select **Measure, D. & Length**. Press **ENTER**.



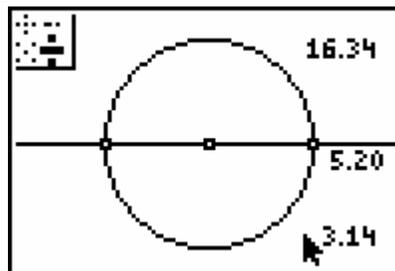
Move the pencil until one endpoint of the diameter is flashing then press **ENTER**. Move to the other endpoint of the diameter and when it is flashing, press **ENTER**. Press **+** to see the measurement rounded to hundredths. The *hand* is active so you can move the measurement to a convenient location then press **ENTER**.



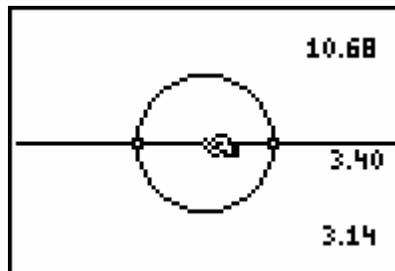
The **Measurement** tool is still active so now you can find the circumference of the circle. Move the pencil until the circle is flashing. Press **ENTER** then **+** to see the circumference rounded to hundredths. Move the *hand* until the measurement is in a convenient location. Press **ENTER**. Press **CLEAR** to turn off the measurement tool.



Press **GRAPH** for F5 and move down to **Calculate**. Press **ENTER**. Move the arrow until the circumference measurement shows a flashing underline and press **ENTER** then **±**. Move the arrow until the diameter measurement has a flashing underline and press **ENTER** again. The number displayed is the ratio of the circle's circumference to its diameter.



To explore this relationship with other circles, press **CLEAR** to turn off the **Calculate** tool. Move the arrow until the point which defined the circle's radius or its center is flashing. Press **ALPHA** to activate the *hand*. Grab the point and move it to change the size of the circle.



To confirm that the ratio is still 3.14, repeat the **Calculate** procedure. (It is actually being recalculated each time the circle changes, but it is impossible to tell this since the number is unchanging.)

Exit the APP using F1 and selecting Quit, or by pressing **2nd** **MODE** for **QUIT**.

