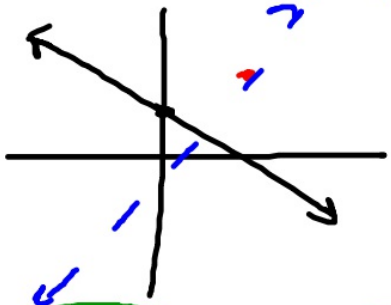
Good afternoon: warm up in notebooks

Write the equation of a line that passes through $(3,4)$ and is perpendicular to the line graphed by $2x+3y=6$.

(x_1, y_1)



$-2x \quad -2x$

$3y = 6 - 2x$

$\frac{3y}{3} = \frac{6}{3} - \frac{2x}{3}$

$y = 2 - \frac{2}{3}x$

$\perp \frac{3}{2}$

$y - 4 = \frac{3}{2}(x-3)$

Point Slope Form

[if you know a point and the slope, use this form]

$$y - y_1 = m(x - x_1)$$

m = slope

(x_1, y_1) = any point on the line

Directly from quizlet! you should know thi formula!!!

Reminders:

tutoring tomorrow 4-5p

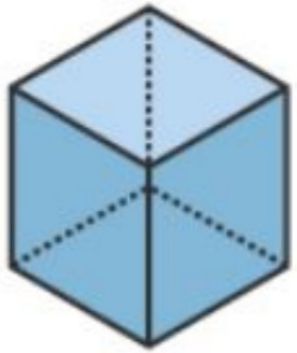
first Q4 assess: Thurs 4/6

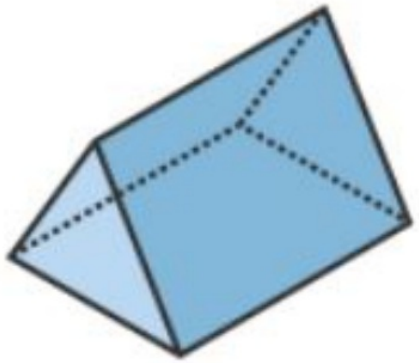
Project reflections

Place in basket near calculators when finished

Which one doesn't belong? Be prepared to justify your reasoning.

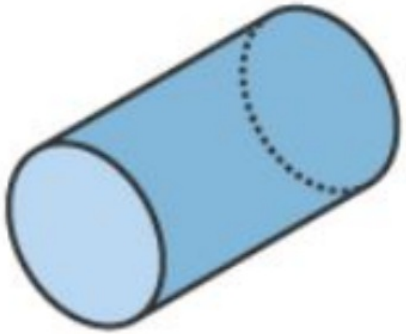
A

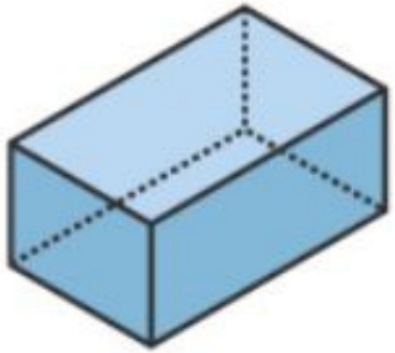




B

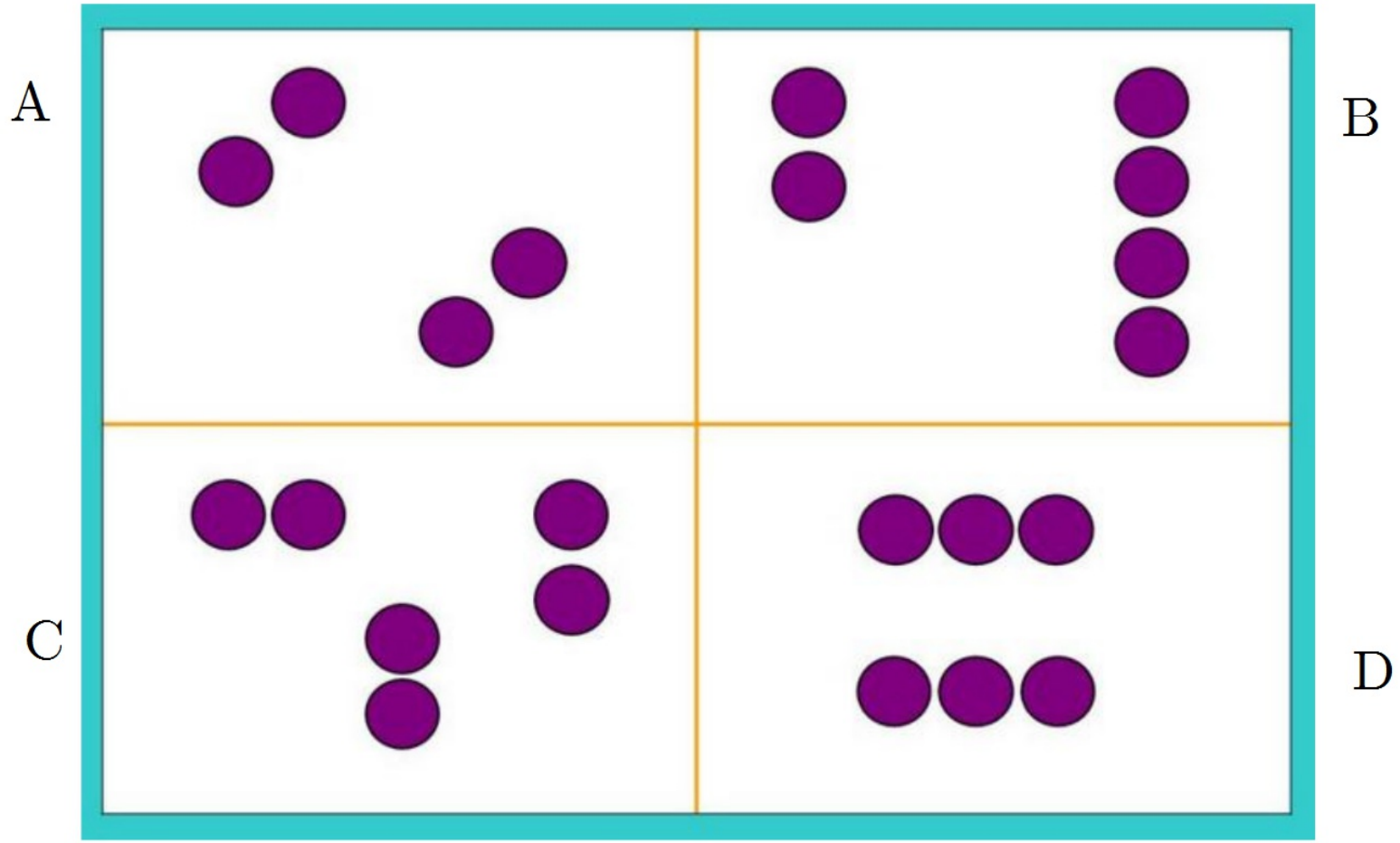
C



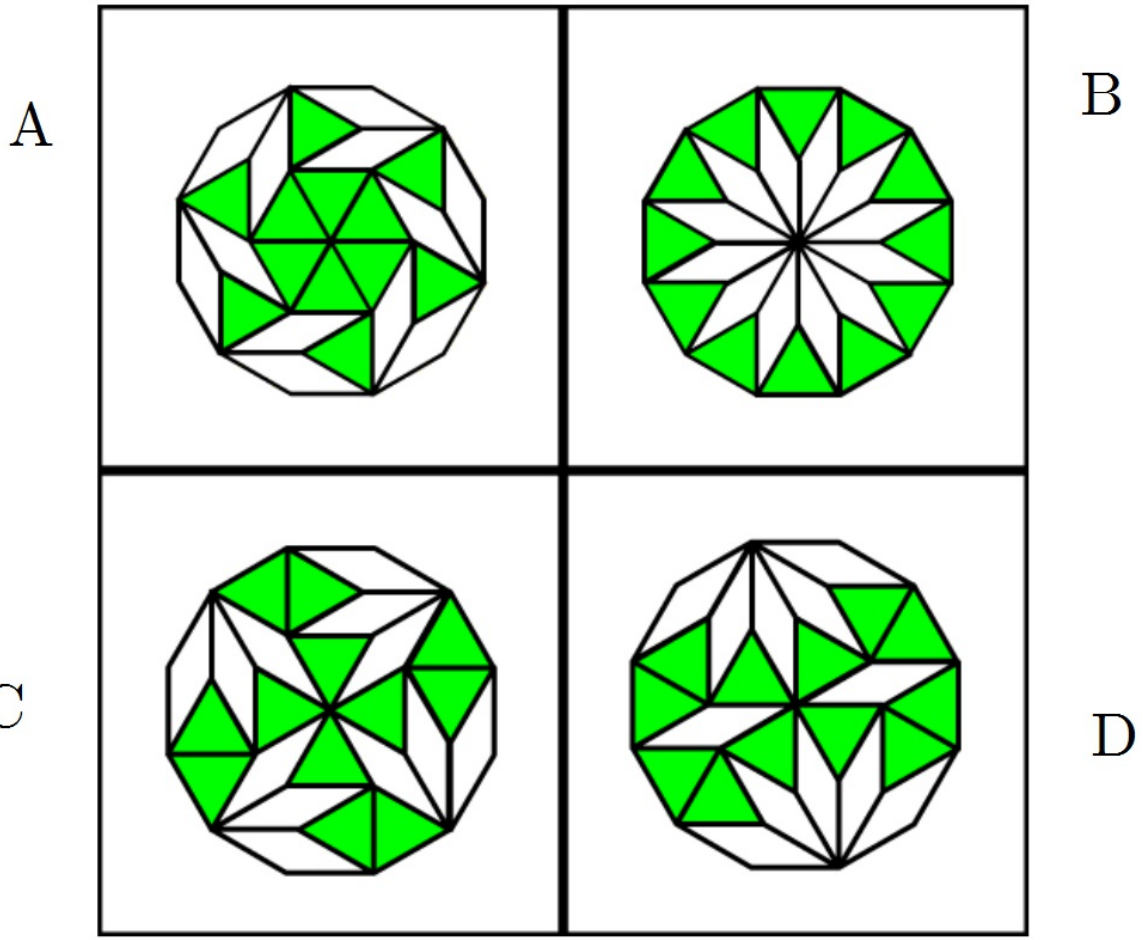


D

Which one doesn't belong? Find reasons why each might not belong



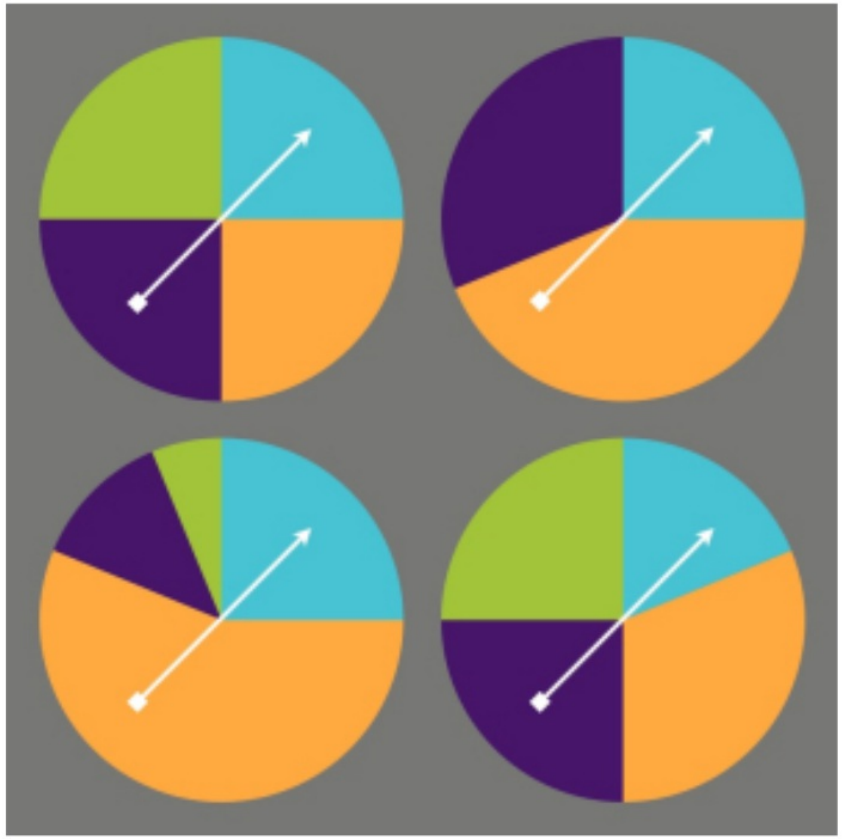
Which one doesn't belong? Be prepared to justify your reasoning.



Which one doesn't belong? Be prepared to justify your reasoning.

A

B



C

D

Get out your notes and also share
with your elbow partner a question you
thought of during WODB
that remains unanswered.

The Equation of a Circle

NOTES

What is the precise definition of a circle?

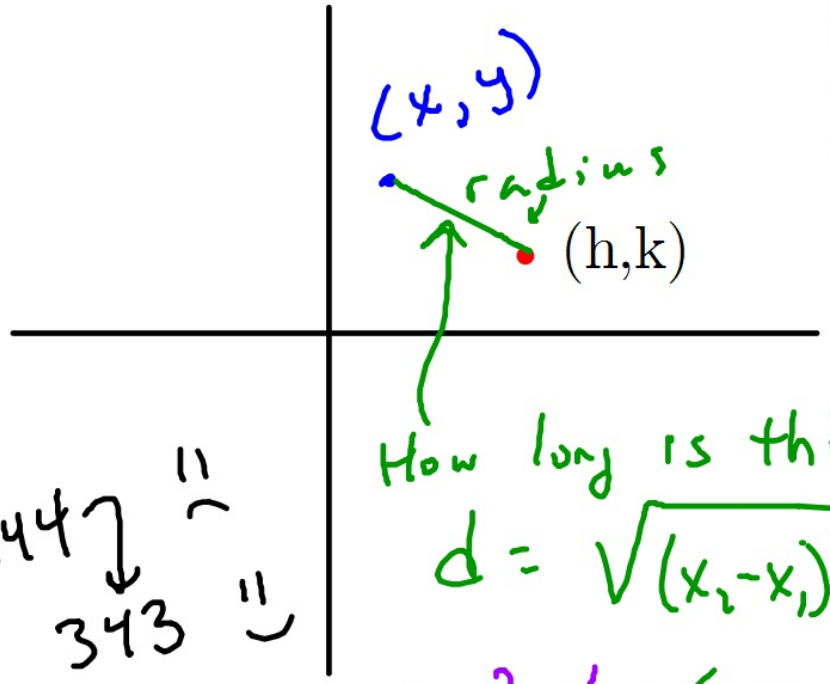
The set of all points that are the same distance from some center point.

If you have a device, get it out and go to:

bit.ly/circleq2017

Kindly share your device with neighbors if needed

Devices away please



Let (h,k) be the center of some circle

Let (x,y) be some point on the circle's perimeter.

$344 \rightarrow 343$

$$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$$

$$(r)^2 = \left(\sqrt{(x-h)^2 + (y-k)^2}\right)^2$$

$$r^2 = (x-h)^2 + (y-k)^2$$ ★ memorize

Circle equation

r – radius

(h,k) – center pt.

EQUATION OF A CIRCLE

[need to know this cold]

center: (h, k)

radius: r

$$(x-h)^2 + (y-k)^2 = r^2$$

ex

Write the equation of a circle with center (2,4) and radius 4

$$(x-2)^2 + (y-4)^2 = 4^2 \quad 16$$

Write the equation of a circle with center (-3,-2) and radius $\sqrt{12}$

$$(x+3)^2 + (y+2)^2 = (\sqrt{12})^2$$

$$= 12$$

What is the center and radius of this circle?

$(x-1)^2+(y+2)^2=16$

$(y-[-2])^2$ $\sqrt{16}$

$r = 4$

$(1,-2)$

What is the center and radius of this circle?

$$x^2+y^2=9$$

$$(x-0)^2+(y-0)^2=3^2$$

center: (0,0)
radius: 3

Write the equation of a circle where (13,-3) and (-1,11) are endpoints of a diameter.

use midpoint formula to find center:

$$\left(\frac{13+-1}{2}, \frac{-3+11}{2}\right)$$

$$(6,4)$$

Use distance formula to find diameter length

$$\sqrt{(13--1)^2+(-3-11)^2} = \sqrt{392}$$

divide by 2 to get radius: $\frac{\sqrt{392}}{2}$

square to get r^2 $\left(\frac{\sqrt{392}}{2}\right)^2 = 98$

$$(x-6)^2+(y-4)^2=98$$

Homework:

p. 395 #12-15