GEO REVIEW

SHAPES

- What real life items best fit the description of “Shere?”
  How many dimensions does a “Sphere” live in?

- What real life items best fit the description “cylinder?”
  How many dimensions does a “Cylinder” live in?

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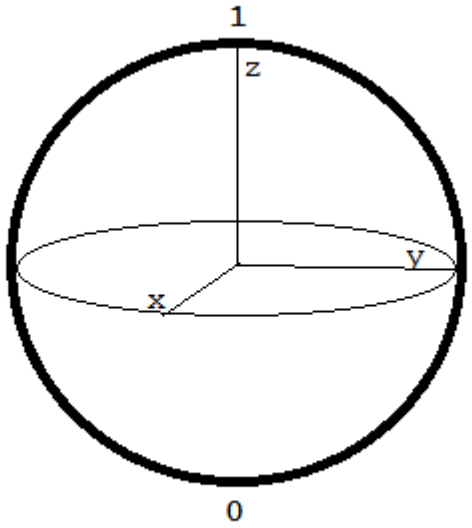
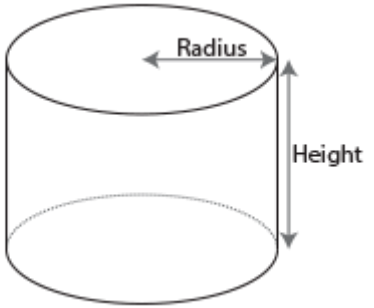


- What real life items best fit the description “cylinder?”
  How many dimensions does a “Cylinder” live in?



Reflection across the line x = 2

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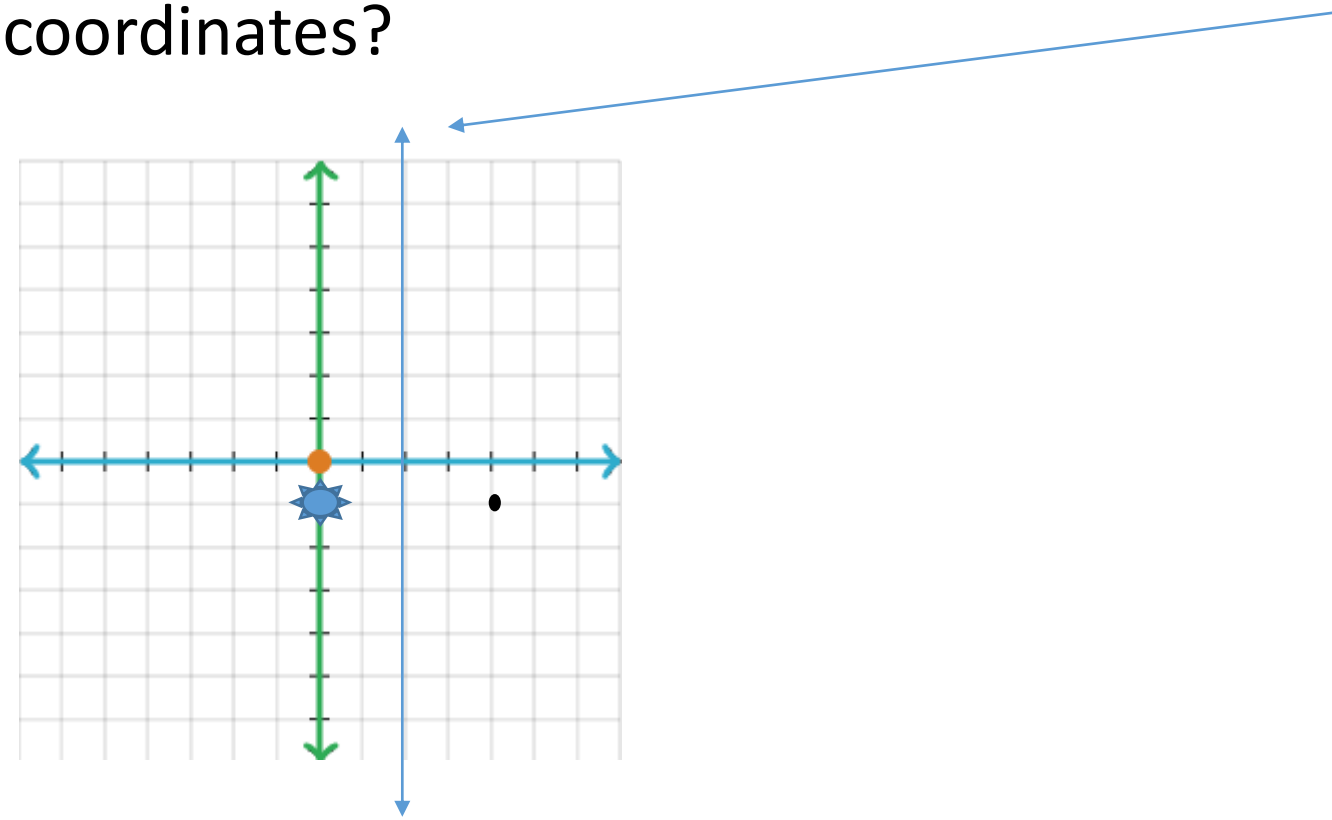
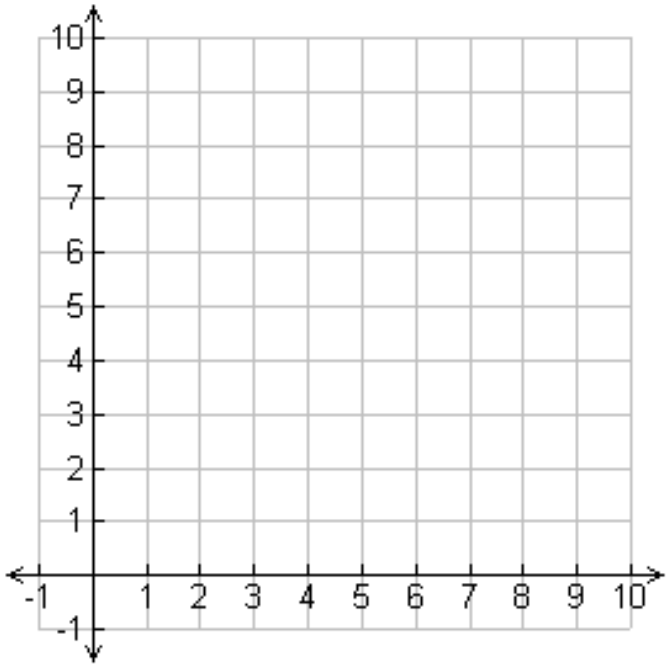
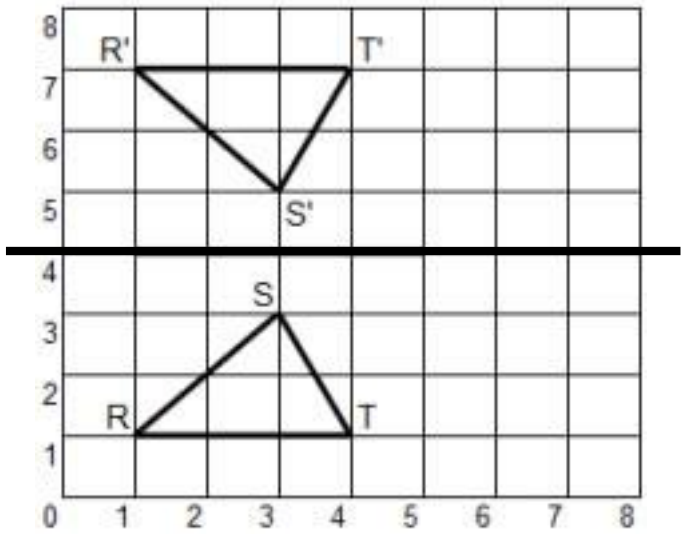


Reflect a shape over a line

- Triangle RST is reflected over the line y = 4. What are the new coordinates for Triangle R'S'T'?
- Original Coordinates: R(1,1) S(3,3) T(4,1)

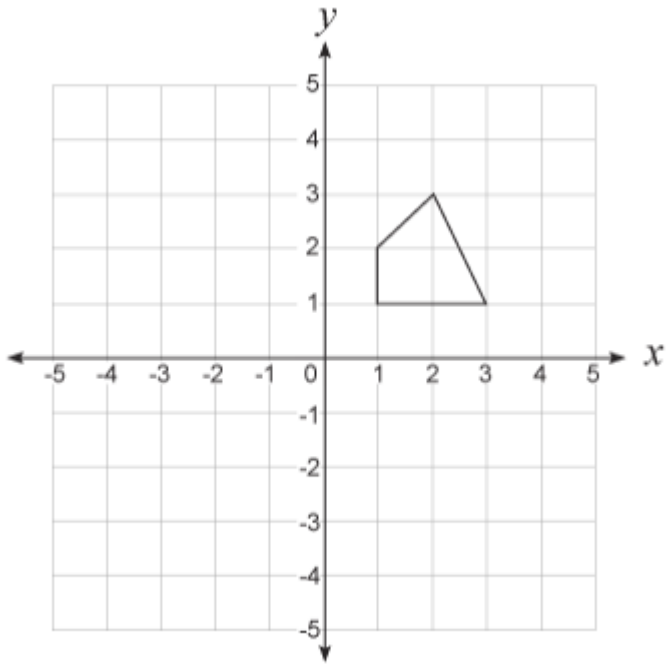


Triangle RST reflected over the line y=4



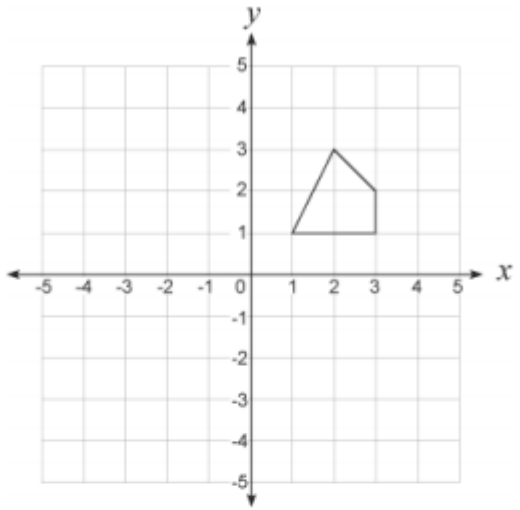
Shape Reflection

- If a shape is reflected over y = 2, what is the resulting graph?



Shape Reflection

a



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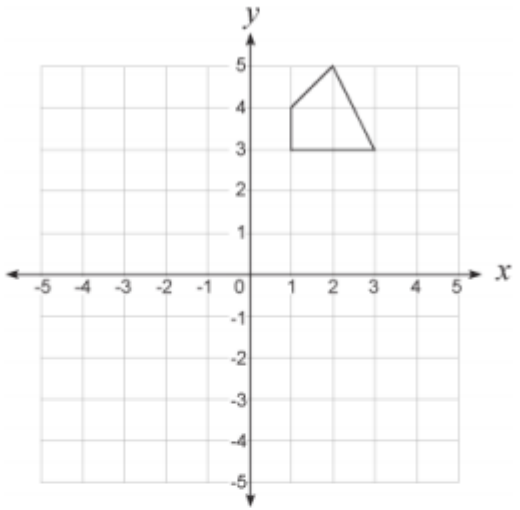
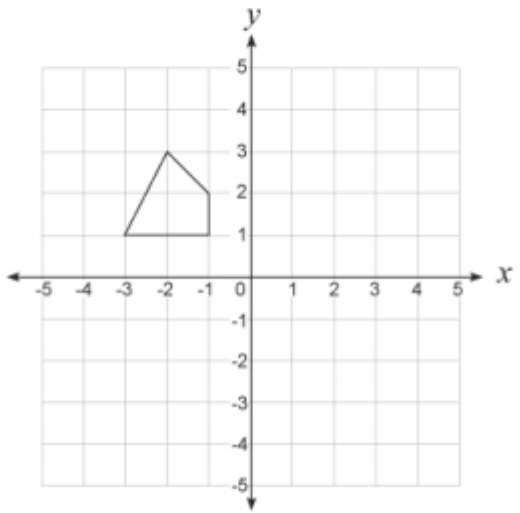


b



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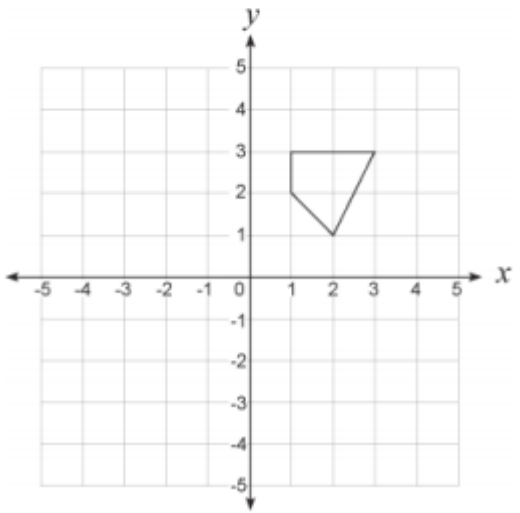

Definition of an Angle

- What is the precise definition of an angle?

(a) two rays that share a common endpoint

(b) two line segments that share a common endpoint

(c) the measure of an arc between two intersecting lines or line segments

(d) one of the four intermediate spaces formed between two intersecting lines

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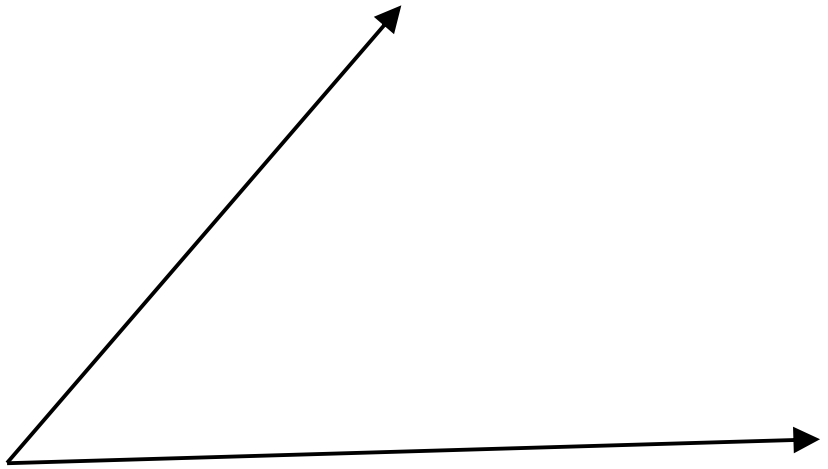
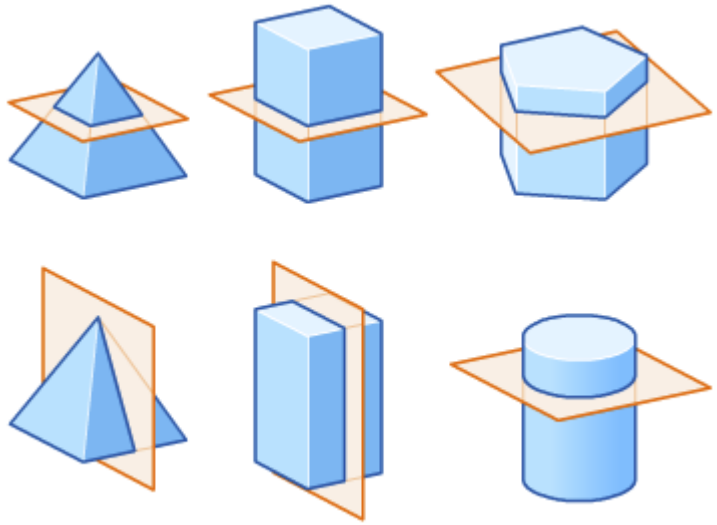


Two rays that share a common endpoint.

Cross Sections

- Describe the cross sections for each of these 3D shapes:



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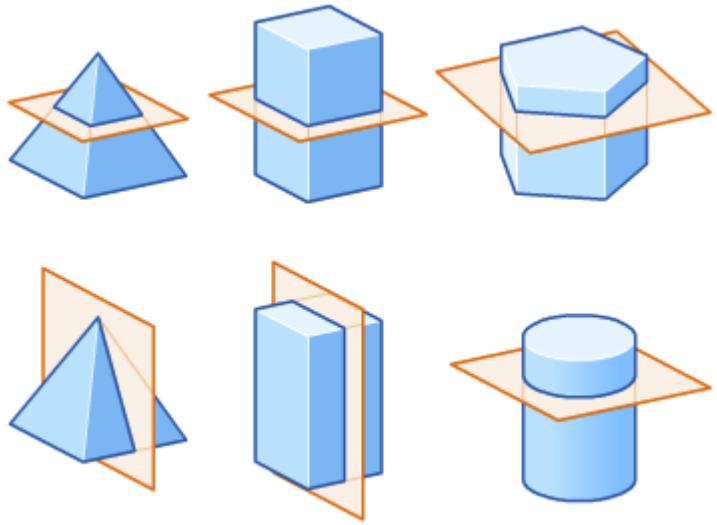

Square, Square, Pentagon, Triangle, Rectangle, Circle

Parallel and Perpendicular

- I graph the line y = 2x -2. You graph a line parallel to my line, but it goes though the point (-4,0). What is the equation of your line?

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- Parallel = SAME SLOPE
- Perpendicular = OPPOSITE, RECIPROCAL SLOPE

$y = 2x + b$

$0 = 2(-4) + b$

$0 = -8 + b$

$8 = b$

SLOPE MATTERS

- If 10 different lines all have the same slope, which is true?

  All of the lines intersect.
  Some of the lines intersect.
  None of the lines intersect.

- If the rise and run of a line is up 3 and right 4, what is the perpendicular slope?

SLOPE MATTERS

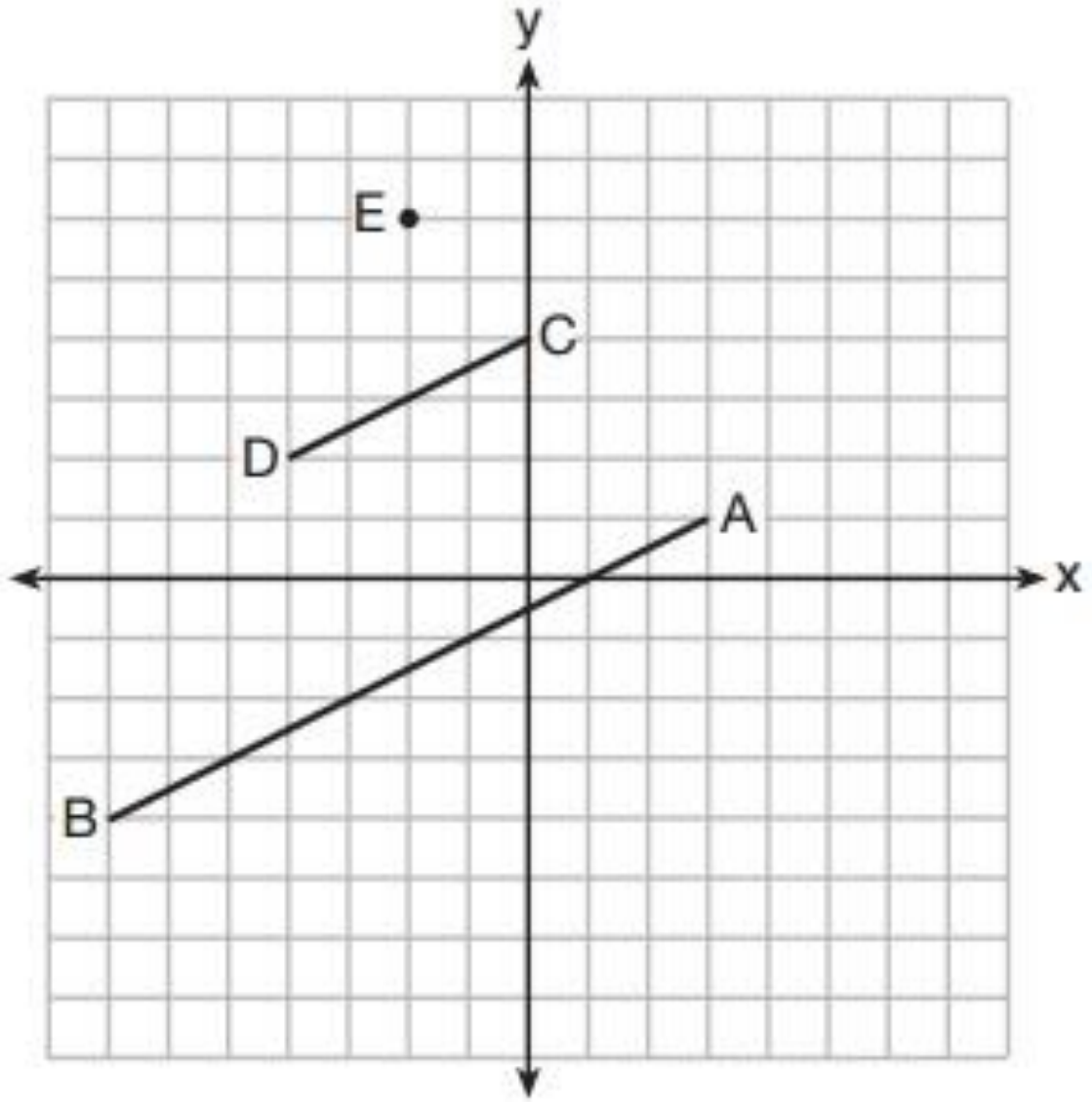
- If 10 different lines all have the same slope, which is true?
  ****None of the lines intersect.****

- If the rise and run of a line is up 3 and right 4, what is the perpendicular slope?

-4/3

Dilation of a Segment

By what scale factor was segment DC dilated about Point E?



Dilation of a Segment

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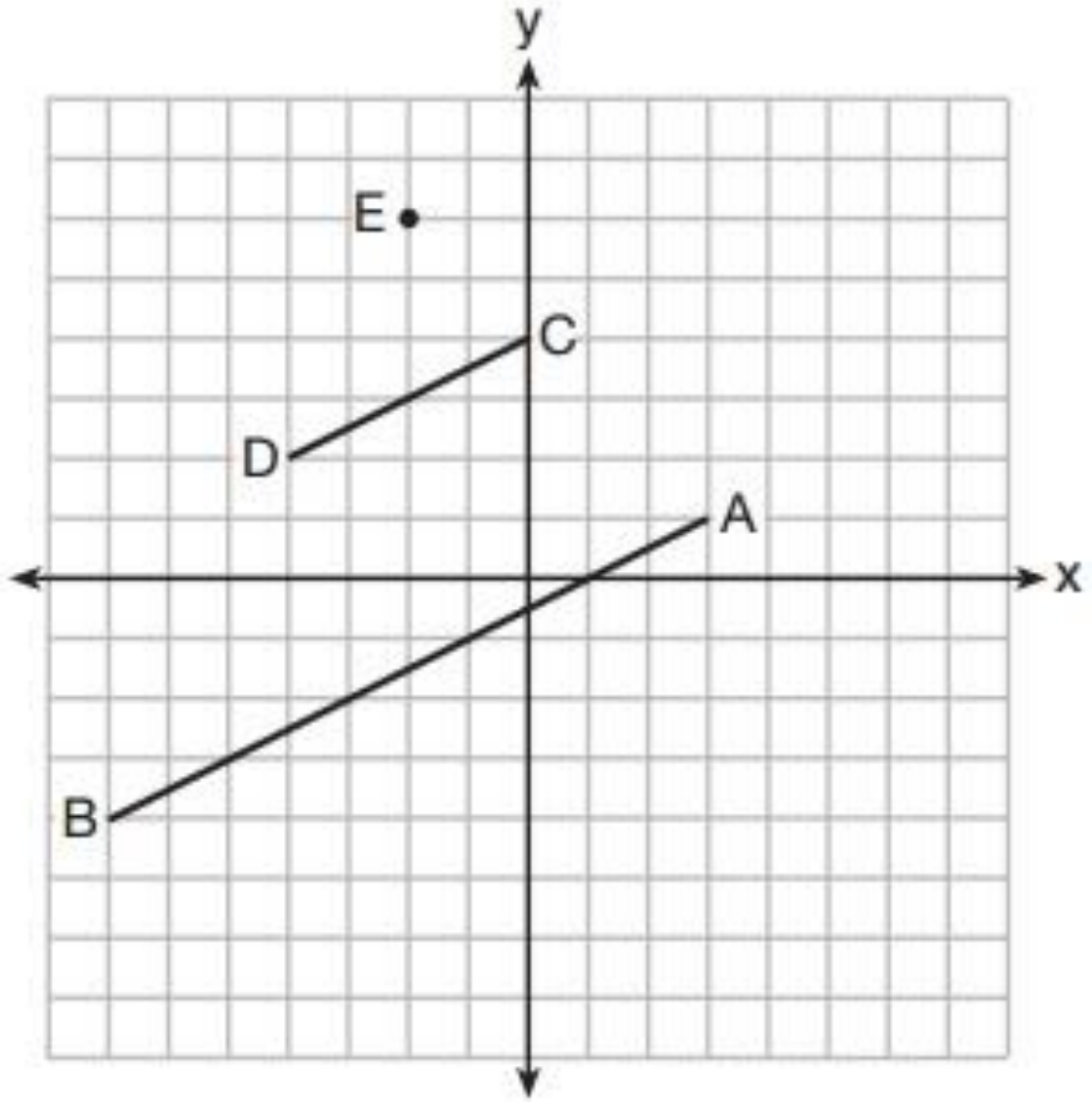
2

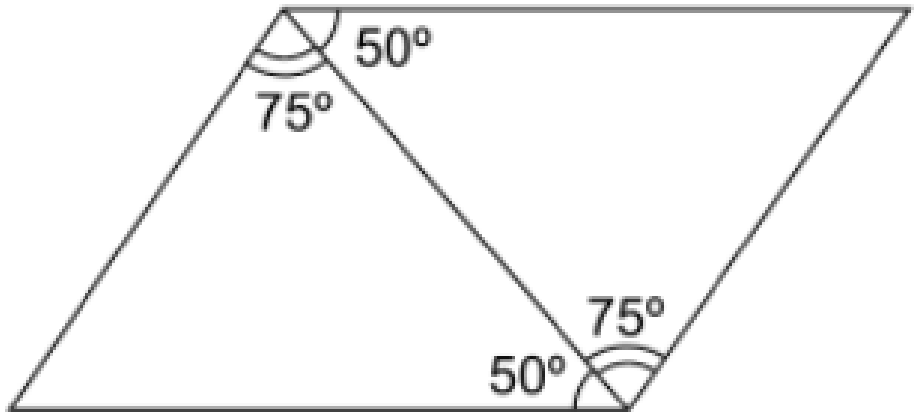


Congruence

- 50 = 50
- 75 = 75
- Same side

- So… ASA

How are these two triangles related?



(a) congruent by side-side-side

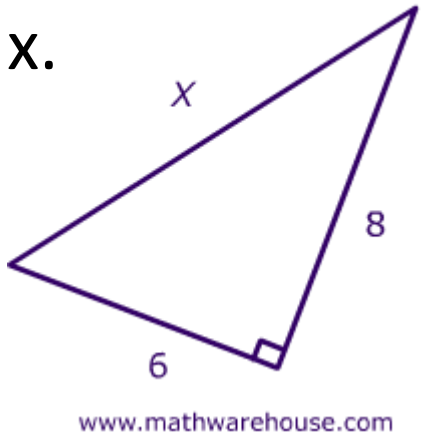
(b) congruent by side-angle-side

(c) congruent by angle-side-angle

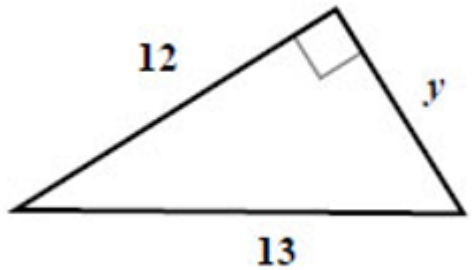
(d) similar but not congruent

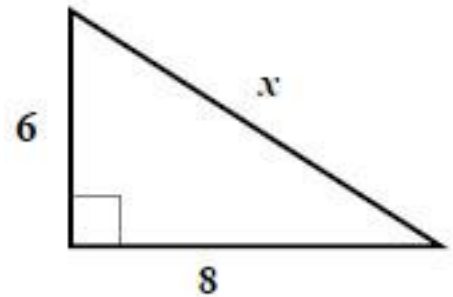
Pythagorean Theorem

- Solve for x.

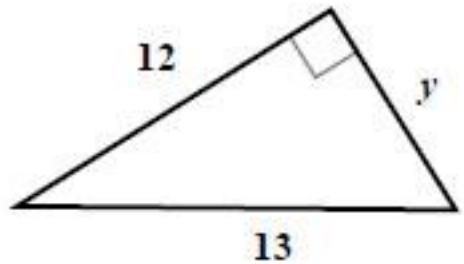


Solve for y





$$6^2 + 8^2 = x^2$$
$$36 + 64 = x^2$$
$$100 = x^2$$
$$\sqrt{100} = \sqrt{x^2}$$
$$\boxed{x = 10}$$



$$12^2 + y^2 = 13^2$$
$$144 + y^2 = 169$$
$$y^2 = 25$$
$$\sqrt{y^2} = \sqrt{25}$$
$$\boxed{y = 5}$$

Perimeter of Triangles

- Side + Side + Side
- … its that easy.

THINK A LITTLE, WILL YA?

- Triangle XYZ is graphed and then transformed to make triangle x'y'z'.
- The triangles are not congruent, but they are similar. What transformation took place?

Reflection?

Rotation?

Vertical Stretch?

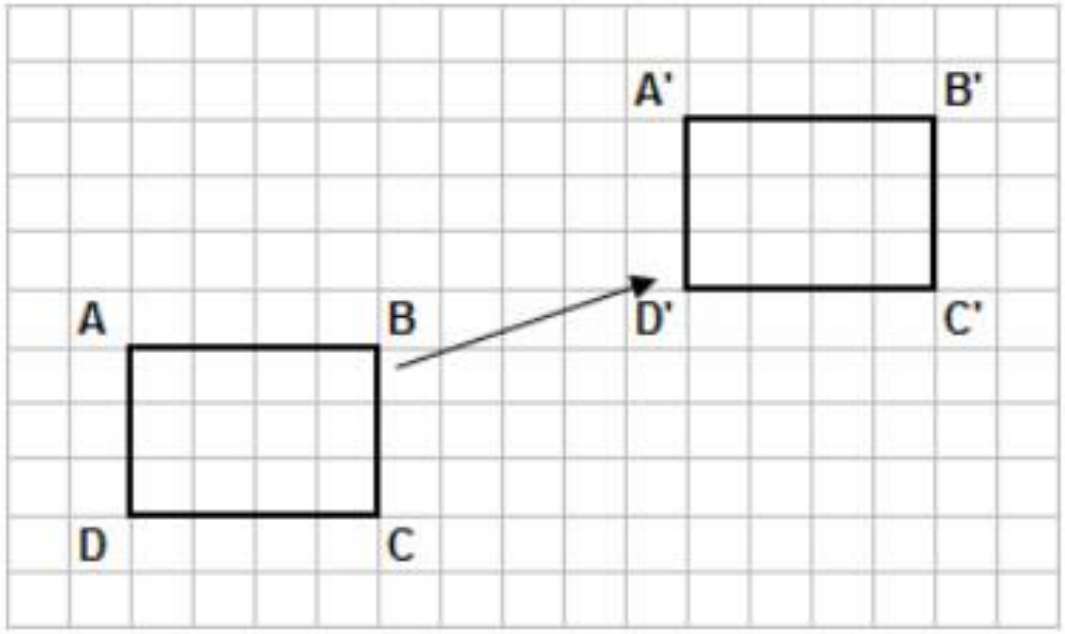
Dilation?

Transformations

- Reflection maintains exact shape & size
- Rotation maintains exact shape & size
- Translation maintains exact shape & size
- Dilation maintains same shape, different size
- Horizontal or vertical skews don’t maintain size or shape

Translation Nomenclature

- (x,y) > (x+9,y+4)



Parallel Lines Cut by a Transversal

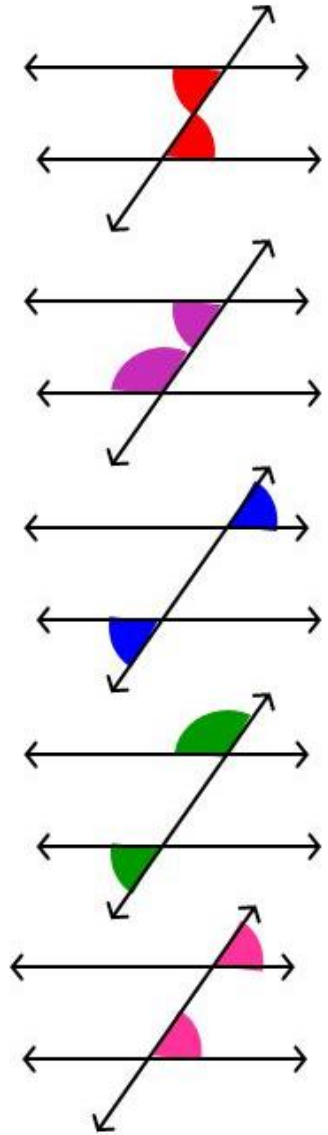
Alternate Interior Angles — Equal

Same Side Interior Angles — Supplementary

Alternate Exterior Angles — Equal

Same Side Exterior Angles — Supplementary

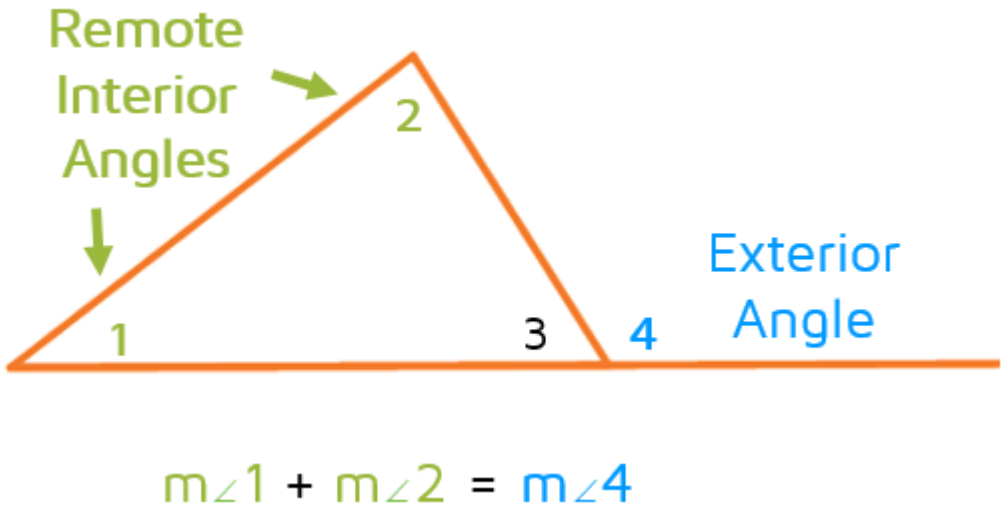
Corresponding Angles — Equal



Angle Theorems

Triangle: < 1 + < 2 + < 3 = 180

Exterior Angles



$m\angle 1 + m\angle 2 = m\angle 4$

Complementary <‘s = 90
Supplementary <‘s = 180

Vertical and Supplementary