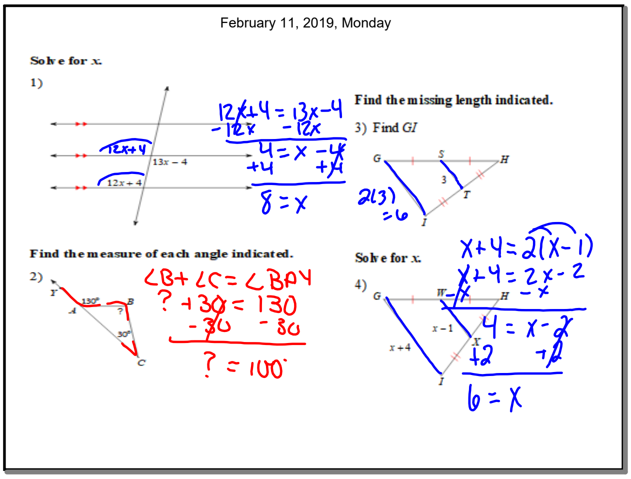

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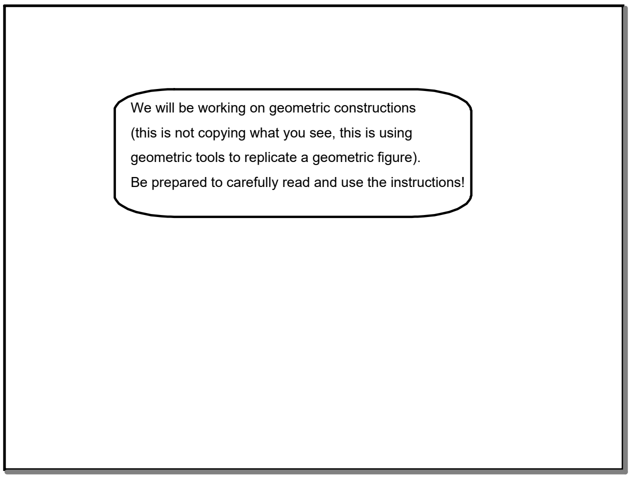

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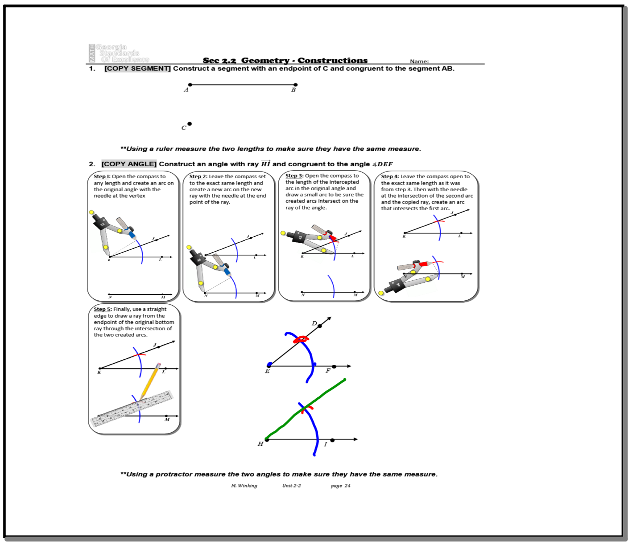

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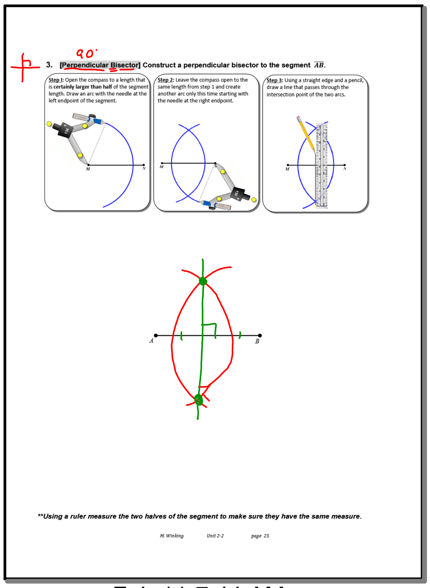

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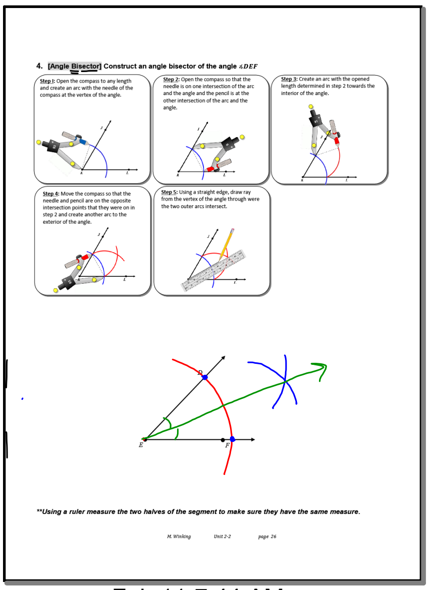

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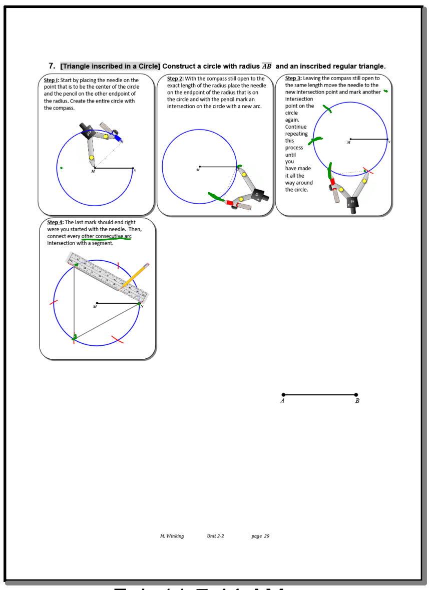

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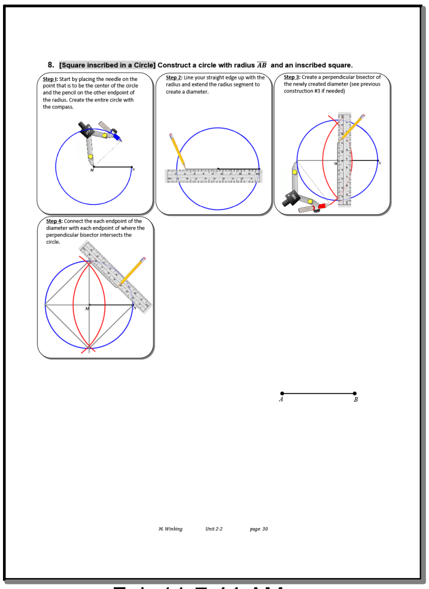

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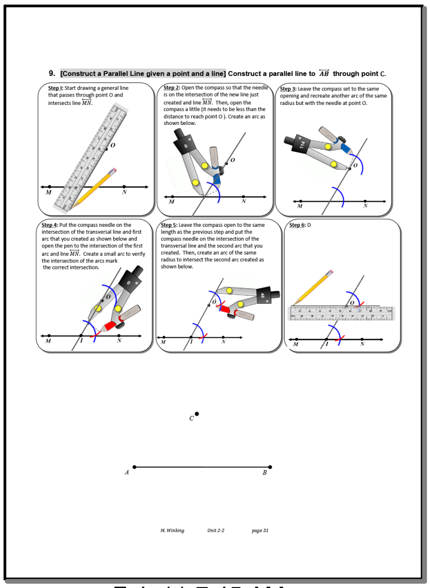

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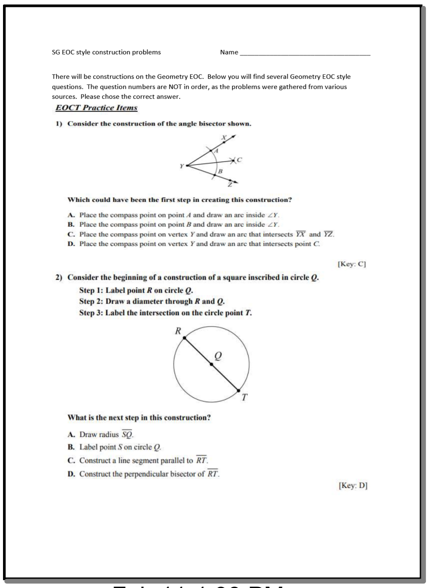

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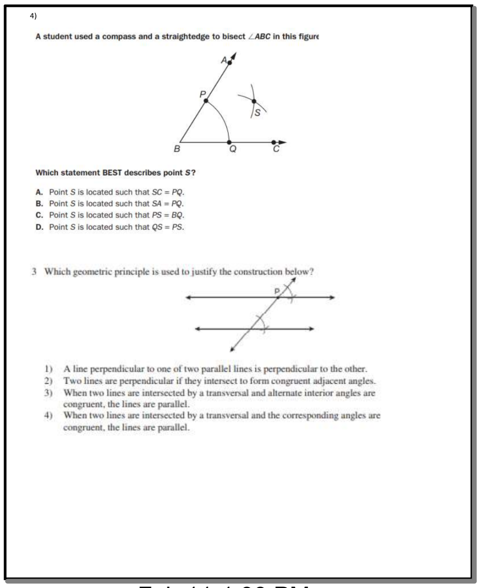

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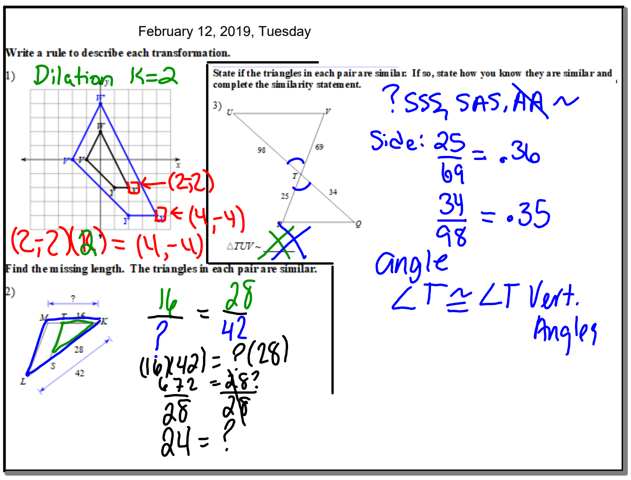

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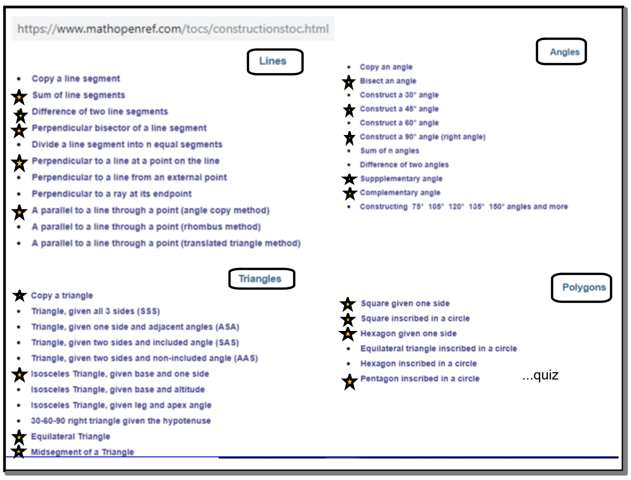

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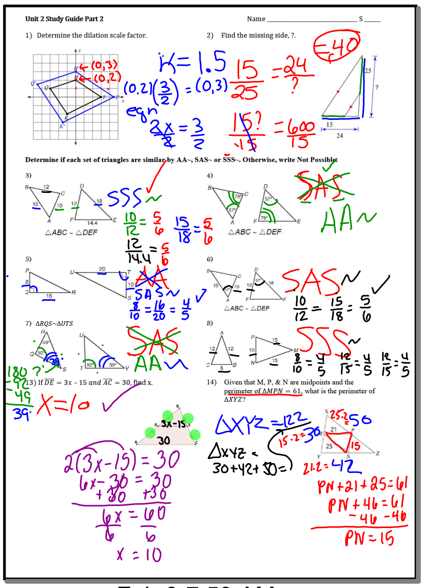

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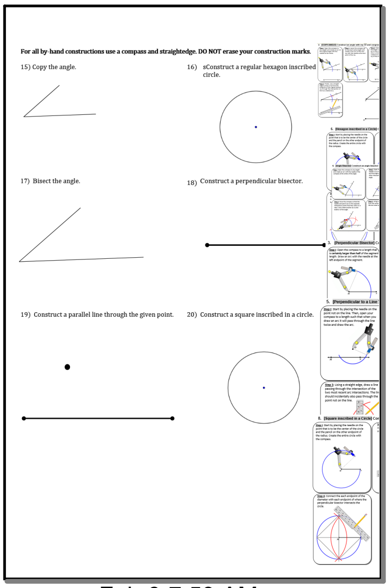

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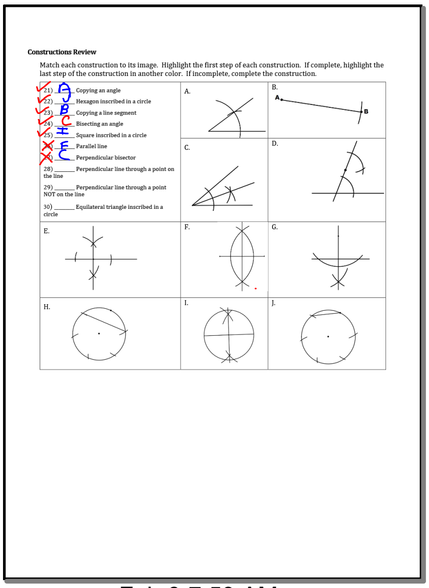

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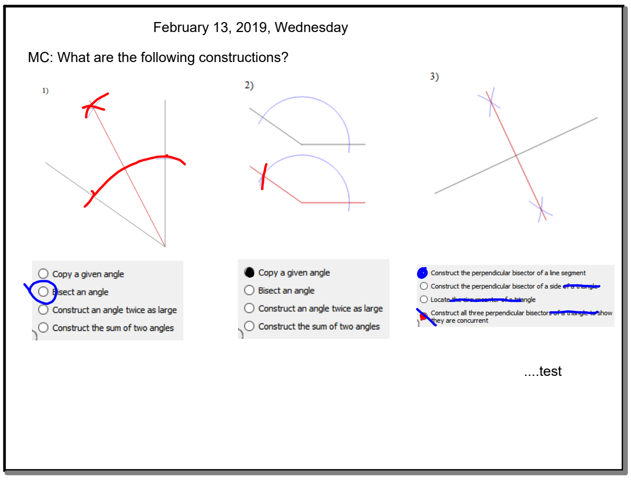

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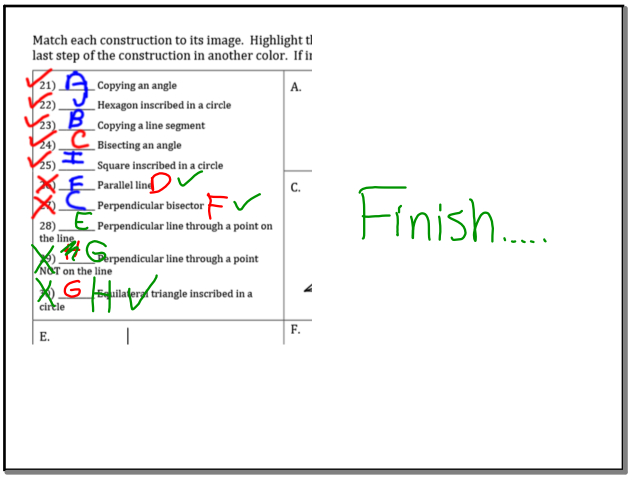

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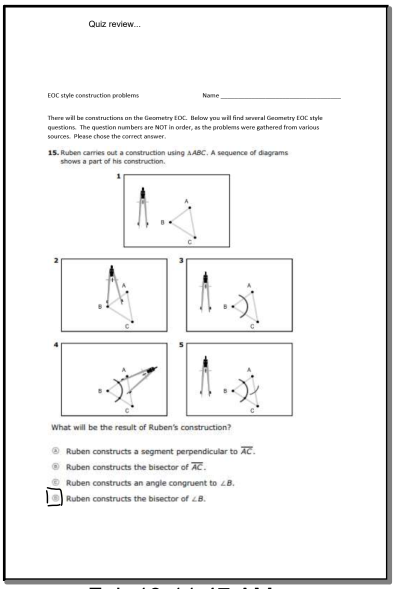

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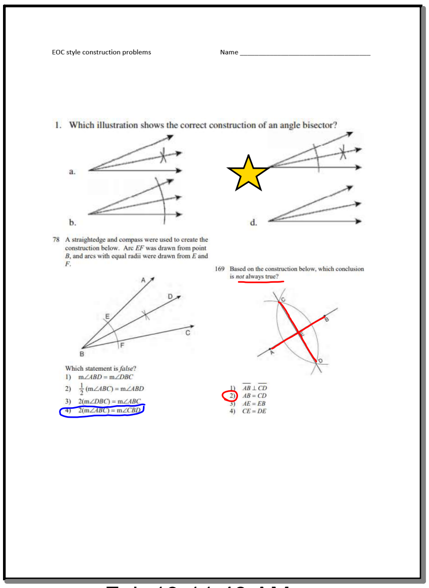

EOC style construction problems Name ______

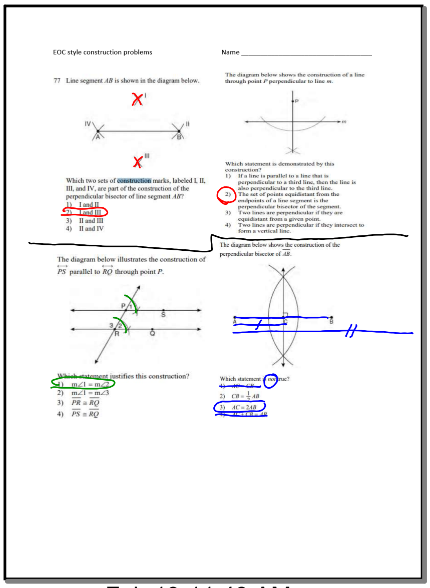
1. Which illustration shows the correct construction of an angle bisector?

78 A straightedge and compass were used to create the construction below. Arc EF was drawn from point B, and arcs with equal radii were drawn from E and F.

169 Based on the construction below, which conclusion is not always true?

Which statement is *false*?

Feb 13-11:48 AM


EOC style construction problems Name ______

77 Line segment AB is shown in the diagram below.

The diagram below shows the construction of a line through point P perpendicular to line m.

Which two sets of construction marks, labeled I, II, III, and IV, are part of the construction of the perpendicular bisector of line segment AB?

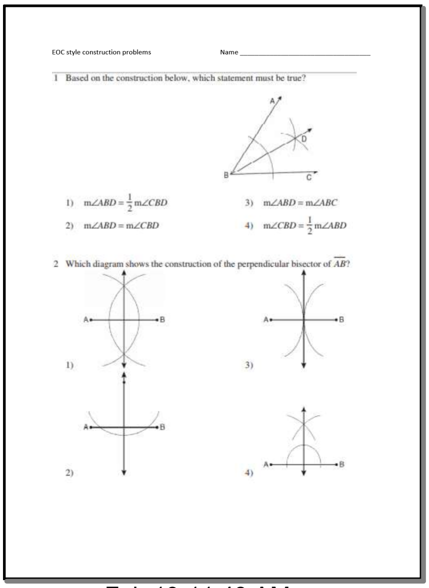
Which statement is demonstrated by this construction?

The diagram below illustrates the construction of PS parallel to RQ through point P.

The diagram below shows the construction of the perpendicular bisector of AB.

Which statement justifies this construction?

Feb 13-11:48 AM

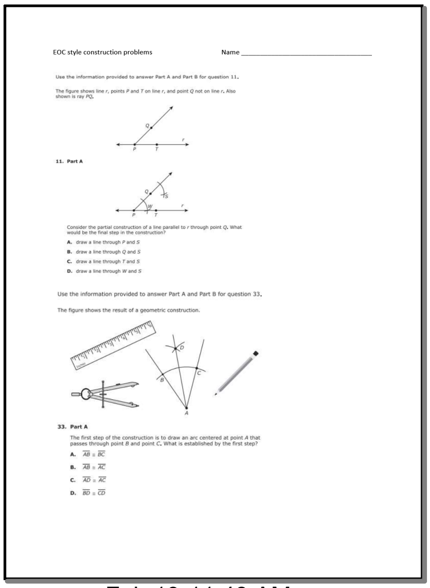

EOC style construction problems Name ______

1 Based on the construction below, which statement must be true?

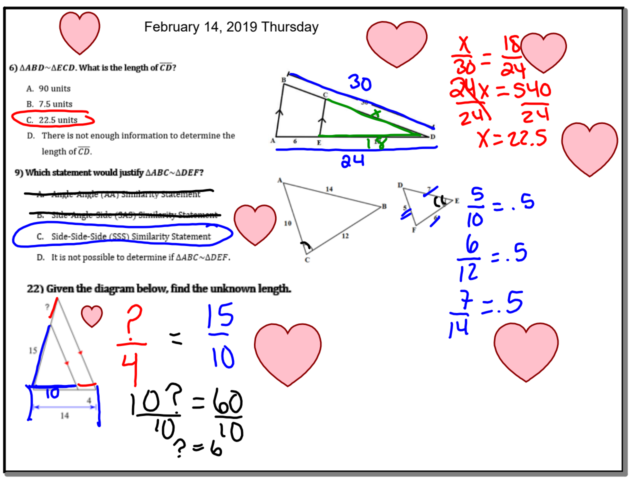
1) $m\angle ABD = \frac{1}{2} m\angle CBD$
2) $m\angle ABD = m\angle CBD$
3) $m\angle ABD = m\angle ABC$
4) $m\angle CBD = \frac{1}{2} m\angle ABD$

2 Which diagram shows the construction of the perpendicular bisector of $\overline{AB}$?

Feb 13-11:48 AM


EOC style construction problems Name ______

Feb 13-11:48 AM


February 14, 2019 Thursday

6) $\triangle ABD \sim \triangle ECD$. What is the length of $\overline{CD}$?

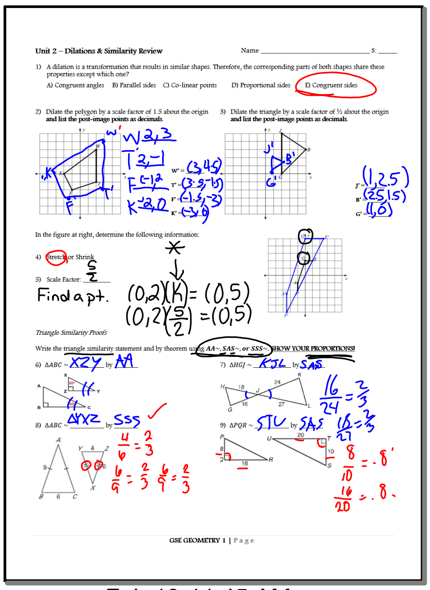
A. 90 units
B. 7.5 units
C. 22.5 units
D. There is not enough information to determine the length of $\overline{CD}$.

9) Which statement would justify $\triangle ABC \sim \triangle DEF$?

A. ~~Angle-Angle (AA) Similarity Statement~~
B. ~~Side-Angle-Side (SAS) Similarity Statement~~
C. Side-Side-Side (SSS) Similarity Statement
D. It is not possible to determine if $\triangle ABC \sim \triangle DEF$.

22) Given the diagram below, find the unknown length.

Feb 6-8:09 AM


Unit 2 – Dilations & Similarity Review Name ______

1) A dilation is a transformation that results in similar shapes. Therefore, the corresponding parts of both shapes share these properties except which one?

A) Congruent angles B) Parallel sides C) Co-linear points D) Proportional sides E) Congruent sides

2) Dilate the polygon by a scale factor of 1.5 about the origin and list the post-image points as decimals.

3) Dilate the triangle by a scale factor of ½ about the origin and list the post-image points as decimals.

In the figure at right, determine the following information:

4) Stretch or Shrink

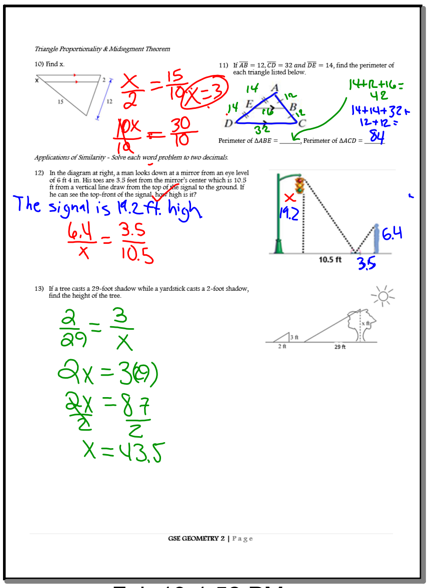
5) Scale Factor

Triangle Similarity Proofs

Write the triangle similarity statement and by theorem using AA~, SAS~, or SSS~. SHOW YOUR PROPORTIONS!

GSE GEOMETRY 1 | Page

Feb 13-11:45 AM



Triangle Proportionality & Midsegment Theorem

10) Find x.

11) If $\overline{AB} = 12$, $\overline{CD} = 32$ and $\overline{DE} = 14$, find the perimeter of each triangle listed below.

Perimeter of ΔABE = ______ Perimeter of ΔACD = ______

Applications of Similarity - Solve each word problem to two decimals

12) In the diagram at right, a man looks down at a mirror from an eye level of 6 ft 4 in. His toes are 3.5 feet from the mirror's center which is 10.5 ft from a vertical line draw from the top of the signal to the ground. If he can see the top-front of the signal, how high is it?

The signal is 14.2 ft. high

13) If a tree casts a 29-foot shadow while a yardstick casts a 2-foot shadow, find the height of the tree.

$\frac{2}{29} = \frac{3}{x}$

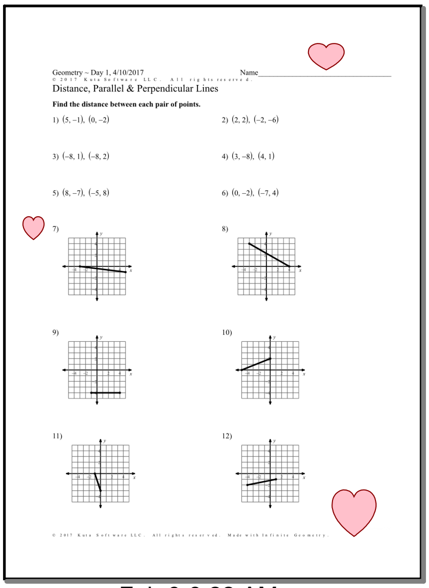
$2x = 3(29)$

$\frac{2x}{2} = \frac{87}{2}$

$x = 43.5$

GSE GEOMETRY 2 | Page

Feb 13-1:52 PM



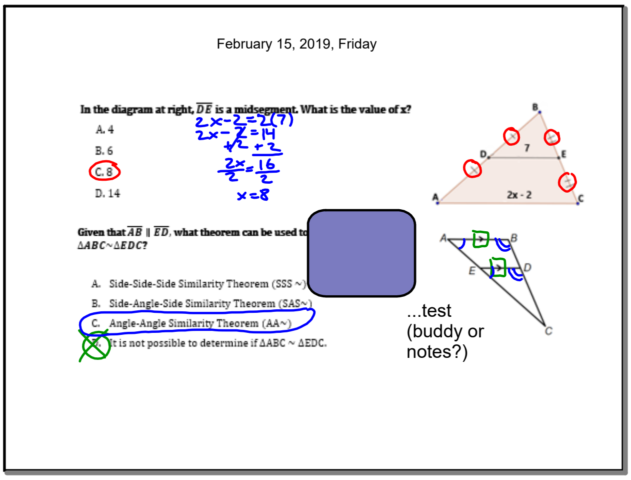
Geometry ~ Day 1, 4/10/2017 Name______________

Distance, Parallel & Perpendicular Lines

Find the distance between each pair of points.

1) (5, −1), (0, −2)
2) (2, 2), (−2, −6)
3) (−8, 1), (−8, 2)
4) (3, −8), (4, 1)
5) (8, −7), (−5, 8)
6) (0, −2), (−7, 4)
7)
8)
9)
10)
11)
12)

Feb 6-8:22 AM



February 15, 2019, Friday

In the diagram at right, $\overline{DE}$ is a midsegment. What is the value of x?

A. 4
B. 6
C. 8
D. 14

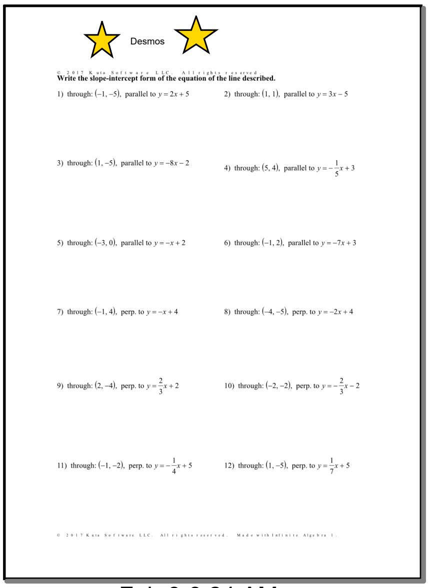
$2x-2=2(7)$
$2x-2=14$
$+2 \quad +2$
$\frac{2x}{2}=\frac{16}{2}$
$x=8$

Given that $\overline{AB} \parallel \overline{ED}$, what theorem can be used to ... $\Delta ABC \sim \Delta EDC$?

A. Side-Side-Side Similarity Theorem (SSS ~)
B. Side-Angle-Side Similarity Theorem (SAS~)
C. Angle-Angle Similarity Theorem (AA~)
D. It is not possible to determine if ΔABC ~ ΔEDC.

...test (buddy or notes?)

Feb 15-7:45 AM

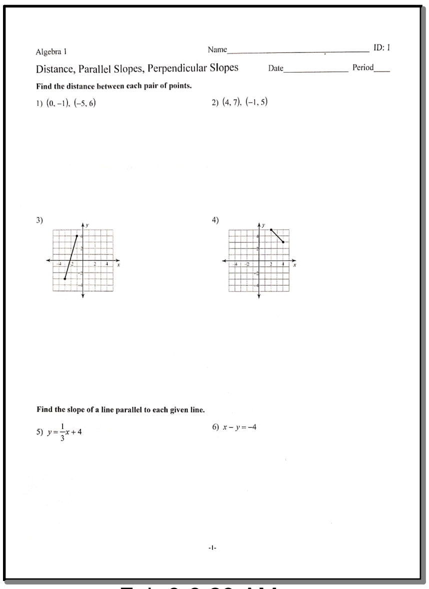


Desmos

Write the slope-intercept form of the equation of the line described.

1) through: (−1, −5), parallel to $y = 2x + 5$
2) through: (1, 1), parallel to $y = 3x - 5$
3) through: (1, −5), parallel to $y = -8x - 2$
4) through: (5, 4), parallel to $y = -\frac{1}{5}x + 3$
5) through: (−3, 0), parallel to $y = -x + 2$
6) through: (−1, 2), parallel to $y = -7x + 3$
7) through: (−1, 4), perp. to $y = -x + 4$
8) through: (−4, −5), perp. to $y = -2x + 4$
9) through: (2, −4), perp. to $y = \frac{2}{3}x + 2$
10) through: (−2, −2), perp. to $y = -\frac{2}{3}x - 2$
11) through: (−1, −2), perp. to $y = -\frac{1}{4}x + 5$
12) through: (1, −5), perp. to $y = \frac{1}{7}x + 5$

Feb 6-8:24 AM



Algebra 1 Name______________ ID: 1

Distance, Parallel Slopes, Perpendicular Slopes Date__________ Period____

Find the distance between each pair of points.

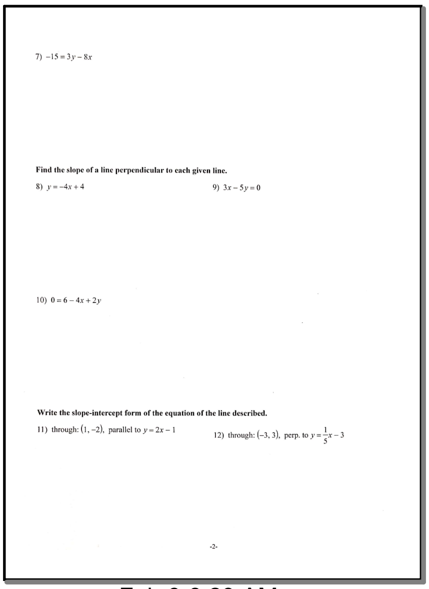
1) (0, −1), (−5, 6)
2) (4, 7), (−1, 5)
3)
4)

Find the slope of a line parallel to each given line.

5) $y = \frac{1}{3}x + 4$
6) $x - y = -4$

-1-

Feb 6-8:29 AM



7) $-15 = 3y - 8x$

Find the slope of a line perpendicular to each given line.

8) $y = -4x + 4$
9) $3x - 5y = 0$
10) $0 = 6 - 4x + 2y$

Write the slope-intercept form of the equation of the line described.

11) through: (1, −2), parallel to $y = 2x - 1$
12) through: (−3, 3), perp. to $y = \frac{1}{5}x - 3$

-2-

Feb 6-8:29 AM

February 15, 2019, Friday

Find the parallel slope and perpendicular slope to the following lines:

1) $y = x - 5$

2) $-3y = -x$

3) $3x + 2y = -2$

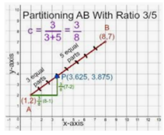
Feb 6-8:29 AM

What is line partitioning? Lets look at Khan...

https://www.khanacademy.org/math/geometry/hs-geo-analytic-geometry/hs-geo-dividing-segments/v/ratios-of-distances-between-colinear-point

Coordinates of point which partitions a directed line segment AB at the ratio of $a:b$ from $A(x_1, y_1)$ to $B(x_2, y_2)$

$$(x, y) = \left(x_1 + \frac{a}{a+b}(x_2 - x_1),\ y_1 + \frac{a}{a+b}(y_2 - y_1)\right)$$



Feb 6-8:31 AM

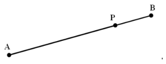
Lesson 3: Partitioning a Line Segment

Standard: G.GPE.4: Use coordinates to prove simple geometric theorems algebraically. **Standard: G.GPE.6:** Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

Essential Question: How can a line be partitioned? How do you find the point of a directed line segment that partitions the segment in a given ratio?

Point P divides $\overline{AB}$ in the ratio 3 to 1.

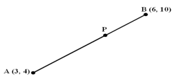
1. What does this mean? Prove it!



2. Do you expect point P to be closer to A or closer to B? Why?

3. How does the slope of $\overline{AP}$ compare with slope of $\overline{AB}$? Why?

Find the coordinate of point *P* that lies along the directed line segment from *A* (3, 4) to *B* (6, 10) and partitions the segment in the ratio of 3 to 2.



A ***directed line segment*** means the line segments has a direction associated with it, usually specified by moving from one endpoint to the other.
Tells the direction in which from which point to start and end. In this case, from Point A to Point B, therefore point A must be labeled A (x_1, y_1) and B (x_2, y_2)

What does that tell you about the distance AP and PB in relation to AB?

1. Label your points (x_1, y_1) and B (x_2, y_2)
   Note: since it is a directed segment, **order does matter**.
2. 2. Convert the ratio into a percent (keep as a fraction) ***a:b***
   $Percent\ ratio\ (\%) = \frac{a}{a+b}$
3. Find the rise and run for the segment (**order does matter**)
   $rise: y_2 - y_1 \quad run: x_2 - x_1$
4. To find the partitioning point:
   $x - coordinate: \boldsymbol{x_1 + run\ (\%\ in\ fraction\ form)}$
   $y - coordinate: \boldsymbol{y_1 + rise\ (\%\ in\ fraction\ form)}$

How can you use the distance formula to check that *P* partitions $\overline{AB}$ in the ratio of 3 to 2?

Feb 6-8:37 AM

Example 1:
Find the coordinates of the point P that lies along the directed segment from A (1, 1) to B (7, 3) and partitions the segment in the ratio of 1 to 4

Coordinates of point which partitions a directed line segment AB at the ratio of $a:b$ from $A(x_1, y_1)$ to $B(x_2, y_2)$

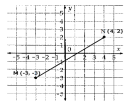
$$(x, y) = \frac{bx_1 + ax_2}{b+a}, \frac{by_1 + ay_2}{b+a}$$

OR

$$(x, y) = \left(x_1 + \frac{a}{a+b}(x_2 - x_1),\ y_1 + \frac{a}{a+b}(y_2 - y_1)\right)$$

Example 2:
Find the coordinate of the point P that lies along the directed segment from C (-3, -2) to D(6,1) and partitions the segment in the ratio 2 to 1.

Example 3:
Find the coordinates of point P that lies along the directed line segment from M to N and partitions the segment in the ratio of 3 to 2



2

Feb 6-8:38 AM

Steps:

I. Label you points (x_1, y_1) and (x_2, y_2) **Note: since it is a directed segment, **order does matter.**

II. Convert the ratio to a fraction. Ratio: $a: b$ Percent ratio: $\frac{a}{a+b}$

III. Find the Δ x and the Δ y: Δ x (run) $\Rightarrow x_2 - x_1$

Δ y (rise) $\Rightarrow y_2 - y_1$

IV. To find the partitioning point:

x: x_1 + run (percent ratio)

y: y_1 + rise (percent ratio)

V. Write final values as an (x, y) ordered pair.

Coordinates of point which partitions a directed line segment AB at the ratio of $a:b$ from $A(x_1, y_1)$ to $B(x_2, y_2)$

$$(x, y) = \frac{bx_1 + ax_2}{b+a}, \frac{by_1 + ay_2}{b+a}$$

OR

$$(x, y) = \left(x_1 + \frac{a}{a+b}(x_2 - x_1),\ y_1 + \frac{a}{a+b}(y_2 - y_1)\right)$$

HOMEWORK

1. Find the coordinates of point P that is $\frac{3}{4}$ of the way along the directed line segment from C (6, -5) to D (-3, 4).
2. Find the coordinates of point Q that is $\frac{2}{3}$ of the way along the directed segment from R (-7, -2) to S (2, 4).
3. Find the coordinates of the point R that lies along the directed segment from J (10, -5) to K (-2, -3) and partitions the segment in the ratio of 2 to 7.
4. Find the coordinates of the point P that lies along the directed segment from M (-5, -2) to N (-5, 8) and partitions the segment in the ratio of 4 to 6.

3

Feb 6-8:38 AM

Practice Quiz 2 Unit 5- Partitioning a Line Segment

Standard: G.GPE.4: Use coordinates to prove simple geometric theorems algebraically. **G.GPE.6:** Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

Coordinates of point which partitions a directed line segment AB at the ratio of $a:b$ from $A(x_1, y_1)$ to $B(x_2, y_2)$

$$(x, y) = \frac{bx_1 + ax_2}{b+a}, \frac{by_1 + ay_2}{b+a}$$

OR

$$(x, y) = \left(x_1 + \frac{a}{a+b}(x_2 - x_1),\ y_1 + \frac{a}{a+b}(y_2 - y_1)\right)$$

1. Find the coordinates of the points that divides $\overline{AB}$ into three equal parts.

A

B

2. What point along the directed segment from A to B partitions the segment in the ratio 1 to 2?

A

B

3. Find the coordinates of point P, that lies $\frac{2}{3}$ of the way on the directed line segment $\overline{AB}$, where A(-2, 5), B(4, 9)

4. Find the coordinates of point P that lies on the line segment $\overline{MQ}$, M(-9, -5), Q(3, 5), and partitions the segment at a ratio of 2 to 5

5. Find the coordinates of point P that lies along the directed segment from T(2,-6) to Q (-8, -4) and partitions the segment in the ratio of 3:4

6. Find the coordinates of point P that is two thirds of the way from point A(9, 6) to point B(-9, 6).

7. Given the points A(-3, -4) and B(5, 0), find the coordinates of the point P on directed line segment $\overline{AB}$ that partitions $\overline{AB}$ in the ratio 2:3.

4

Feb 6-8:38 AM

Geometry ~ Day 2, 4/11/2017 Partitioning Line Segment HW Name _______________

Directions: Find the partitioning point for each problem. You must show your work for all steps to receive credit.

1) Given the point A(-3, -2) and B(6, 1), find the coordinates of the point P on directed line segment AB that partition AB in the ratio 2:1.

2) Given the points A(-3, -4) and B(2, 0), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 2 to 3.

3) Given the points A(-2, 5) and B(2, 3), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 4 to 1.

4) Given the points A(5, -1) and B(-5, 3), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 1:3.

5) Given the points A(-2, 1) and B(4, 5), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 5:2.

6) Find the coordinates of P so that P partitions the segment AB in the ratio 5:1 if A(2, 4) and B(8, 10).

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7) Find the coordinates of P so that P partitions the segment AB in the ratio 1 to 3 if A(-5, 4) and B(7, -4).

8) Find the coordinates of P so that P partitions the segment AB in the ratio 3:4 if A(-9, -9) and B(5, -2).

9) Find the coordinates of P so that P partitions the segment AB in the ratio 5 to 2 if A(-8, -2) and B(6, 19).

10) Find the coordinates of P so that P partitions the segment AB in the ratio 7 to 2 if A(-5, 4) and B(-8, -2).

Find the point that partitions the segment with the two given endpoints with the given ratio.

11) (-3, 4) (7, 6) 1:1

12) (-9, 3) (1, 8) 2:3

13) (8, -5) (4, 7) 1:3

14) (5, -6) (4, 5) 3:4

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