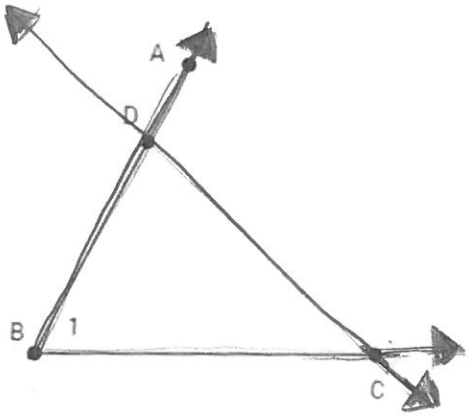
Name: Answer key Per: 8 Date: 10-24-16
Serafino · Geometry (M) T W R F

R–1

Review: Segments & Angles

Quest Review 1

1. Use the figure to the right.



a. Which of the following can be used to correctly name the angle to the right? Circle the letter of all options that are correct.

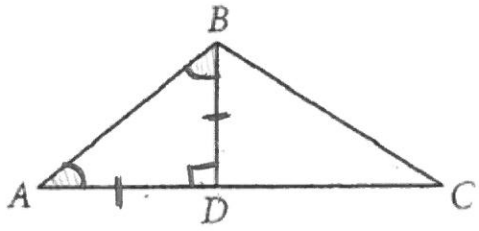
(A) ∠DBC (C) ∠ABC (E) ∠B ~~(G) ∠BD~~
(B) ∠1 ~~(D) ∠ADBC~~ ~~(F) ∠CDA~~ ~~(H) ∠AB~~

b. Circle all the pairs of opposite rays in the figure.

A. $\overrightarrow{AD}$ and $\overrightarrow{DA}$
B. $\overrightarrow{DA}$ and $\overrightarrow{DB}$
C. $\overrightarrow{BC}$ and $\overrightarrow{BD}$
(D.) There are no opposite rays in the figure.

c. In the figure, draw line CD. See diagram

2. Use the triangle to the right:



a. Mark up the figure with the following information:

m∠ADB = 90°, AD = BD, ∠DAB ≅ ∠DBA

See diagram

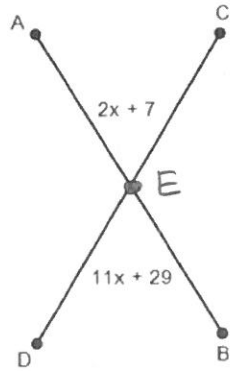
b. Name a pair of adjacent angles that are not a linear pair.

∠ABD & ∠CBD

c. Name a pair of supplementary angles

∠ADB & ∠CDB

3. Label the intersection of AB and CD as point E. Is ∠AED is acute or obtuse or right? Prove it algebraically.



$2x+7 = 11x+29$
$-22 = 9x$
$x = \frac{-22}{9}$
$= 2.\overline{4}$

$m\angle AEC = m\angle DEB = 2.\overline{1}°$

$m\angle AED = m\angle BEC = 177.\overline{8}°$

∠AED is obtuse b/c its measure is 177.8°, which is between 90 and 180

4. Triangle LUV has vertices at L(−3, −3), U(3, 5), V(1, −6).

a. Length of LU = 10

$\sqrt{8^2+6^2} = 2\sqrt{4^2+3^2} = 2\sqrt{25} = 2 \cdot 5$

b. Length of UV = $5\sqrt{5}$

$\sqrt{11^2+2^2} = \sqrt{125}$

c. Length of LV = 5

$\sqrt{3^2+4^2} = 5$

ΔLUV is a right Δ! :)

Midpoint of LU (0, 1)

Midpoint of UV (2, −1/2)

Midpoint of LV (−1, −9/2)

d. If U is the midpoint of LUK, what are the coordinates of K? (9, 13)

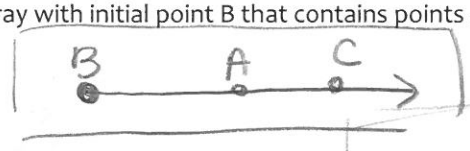
$3 = \frac{-3+x}{2}$ $\quad 5 = \frac{-3+y}{2}$

$6 = -3 + x$ $\quad 10 = -3 + y$

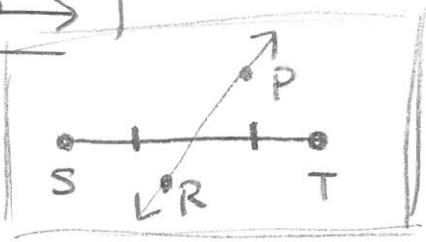
$x = 9$ $\quad y = 13$

5. Draw, name and notate the figure:

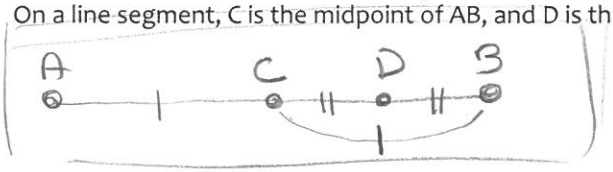
a. The ray with initial point B that contains points A and C



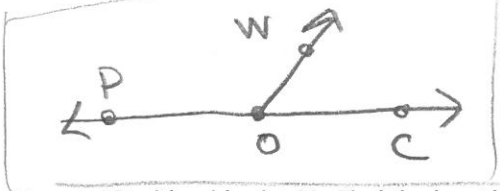
b. The line RP bisects segment ST.



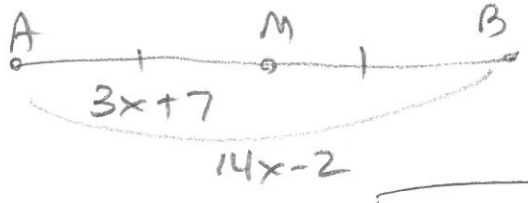
c. On a line segment, C is the midpoint of AB, and D is the midpoint of CB.



d. Angle POW and angle COW are a linear pair.



6. Draw segment AB with midpoint M. Find the length of MB if AM = 3x + 7 and AB = 14x − 2.



$(3x+7)+(3x+7) = 14x-2$

$6x + 14 = 14x - 2$

$16 = 8x$

$x = 2$

MB = 13

7. Using the figure, name the following:

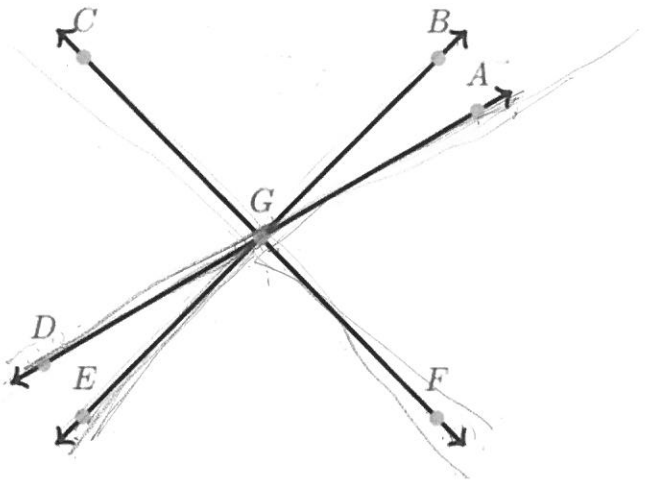
a. Linear Pairs:

a) ∠FGA and ∠ FGD or ∠CGA

b) ∠EGD and ∠ EGA or ∠BGD

b. Adjacent angles that are not a linear pair.

∠FGE and ∠ EGD or ∠FGA



c. Vertical angles:

a) ∠BGA and ∠ DGE

b) ∠AGF and ∠ CGD

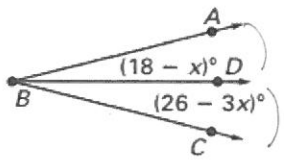
d. Three collinear points:

Point D, Point G, and Point A

e. Three noncollinear points:

Point C, Point G, and Point (anything but F)

8. In the figure below, ray BD bisects ∠ABC. Find m ∠ABC.



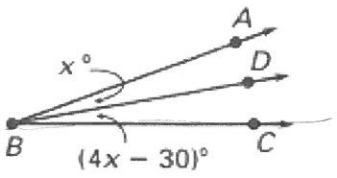
$18 - x = 26 - 3x$

$2x = 8$

$x = 4$

$m\angle ABC = 28^\circ$

9. In the figure below, m ∠ ABC = 50°. Find the measure of each angle.



$x + 4x - 30 = 50$

$5x - 30 = 50$

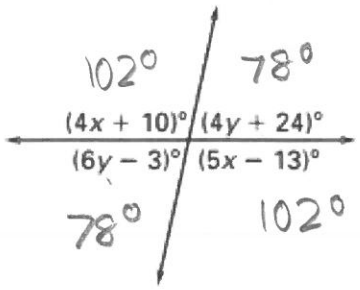
$5x = 80$

$x = 16$

$m\angle ABD = 16^\circ$

$m\angle DBC = 34^\circ$

10. In the figure to the right, find the value of x and y.



$4x+10=5x-13$

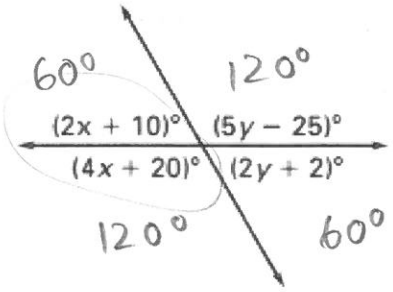
$23=x$

$6y-3=4y+24$

$2y=27$

$y=13.5$

11. In the figure to the right, find the value of x and y.



$2x+10+4x+20=180$

$6x+30=180$

$6x=150$

$x=25$

$7y-23=180$

$7y=203$

$y=29$

12. Two angles are supplementary. One angle is 17.63° less than the other. Find the two angles.

$\angle A = x$

$\angle B = x-17.63$

$A+B=180$

$x+x-17.63=180$

$2x=197.63$

$x=98.815$

$m\angle A = 98.815°$

$m\angle B = 81.185°$

13. Solve the following equation: $2(4x-5)-3(2x-4)=2x+2$

$8x-10-6x+12=2x+2$

$2x+2=2x+2$

$x=x$

x = All real #s

$x \in \mathbb{R}$

14. On segment AD, find the coordinates of the midpoint, M, if A(2, –6) and D(4, 9)

$M\left(\frac{6}{2}, \frac{3}{2}\right) \rightarrow M(3, 3/2)$

15. On segment WX, W(2, 5) and M(–4, 12) Find the coordinates of endpoint X.

$X(-10, 19)$

$\frac{W+X}{2}=M$

$\frac{2+x}{2}=-4$

$2+x=-8$

$x=-10$

$\frac{5+y}{2}=12$

$5+y=24$

$y=19$