Quiz Review Questions, due Friday 8/19 on Quiz Day

(Most of these questions are taken from an old test given by the state or practice problems from the ACT, and you will likely see problems like them on the EOC exam and the ACT.)

The material covered on this quiz will include the following topics:

- Basic vocabulary and applications of vocabulary, including naming and drawing figures
- Types of Angles
- Congruence with lines, segments, and angles
- Segment and Angle Addition
- Constructions

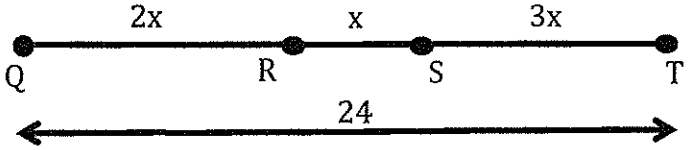
1.)

a) m $\overline{AB}$ + m $\overline{AC}$ = m $\overline{AC}$

b) Find m $\overline{AC}$. (3cm) + (2cm) = 5cm

m $\overline{AC}$ = 5cm

2.)



a) m $\overline{QR}$ + m $\overline{RS}$ + m $\overline{ST}$ = m $\overline{QT}$

b) Using the algebraic expressions given in the figure,

m $\overline{QR}$ = 2x ; m $\overline{RS}$ = x ; m $\overline{ST}$ = 3x

c) Now substitute the information from part b) into the equation from part a). (2x) + (x) + (3x) = 24

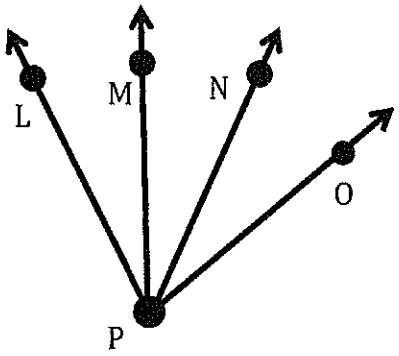
d) Solve for x. $2x+1x+3x=24$

$\frac{6x}{6}=\frac{24}{6}$ $x=4$

e) Find the m $\overline{ST}$ by plugging in your answer from part d).

$m\overline{ST}=3x=3(4)=12=m\overline{ST}$

3.)



m∠ LPM = 30°

m∠ MPN = 65°

m∠ LPO = 110°

a) $m\angle$ LPM $+ m\angle$ MPN $+ m\angle$ NPO $= m\angle LPO$

b) Plug the angle measures given in the problem into your equation from part a)

$30^\circ + 65^\circ + m\angle NPO = 110^\circ$

$-30^\circ \quad -65^\circ \qquad\qquad -30^\circ$

-65°

$m\angle NPO = 15^\circ$

c) Solve for $m\angle NPO$.

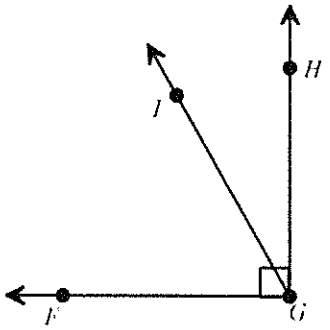
4.) In the figure $m\angle FGI = (2x + 9)^\circ$ and $m\angle HGI = (4x - 15)^\circ$. Find $m\angle FGI$ and $m\angle HGI$.

A. $m\angle FGI = 71^\circ$ and $m\angle HGI = 109^\circ$

B. $m\angle FGI = 45^\circ$ and $m\angle HGI = 45^\circ$

C. $m\angle FGI = 33^\circ$ and $m\angle HGI = 33^\circ$

D. $m\angle FGI = 41^\circ$ and $m\angle HGI = 49^\circ$



a) What kind of angle is $\angle HGF$? Right Angle

b) $m\angle HGF =$ 90 °

c) $m\angle$ HGI $+ m\angle$ FGI $= m\angle HGF$

d) Plug all the given information in the problem into your equation in part c) $(4x-15)+(2x+9)=90$

e) Solve for x.

$6x - 6 = 90$

$+6 \quad +6$

$\frac{6x}{6} = \frac{96}{6}$

$\boxed{x = 16}$

f) Plug in your answer from part e) to find the $m\angle FGI$ and $m\angle HGI$.

$m\angle FGI = 2x+9 = 2(16)+9 = 41$

$\boxed{m\angle FGI = 41°}$

$m\angle HGI = 4x-15 = 4(16)-15 = 49$

$\boxed{m\angle HGI = 49°}$

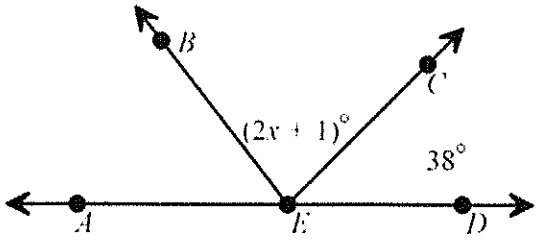
5.) $\overrightarrow{EB}$ is the angle bisector of $\angle AEC$. What is the value of x?

A. $x = 35$

B. $x = 51.5$

C. $x = 70.5$

D. $x = 142$



a) If the $m\angle BEC = (2x + 1)°$, and ray EB bisects $\angle AEC$ into two equal parts, then the $m\angle AEB =$ (2x+1) °.

b) $m\angle$ AEB $+ m\angle$ BEC $+ m\angle$ CED $= 180°$, since a line measures 180°.

c) Plug all the given angle measures into your equation from part b)

$(2x+1) + (2x+1) + 38 = 180$

d) Solve for x.

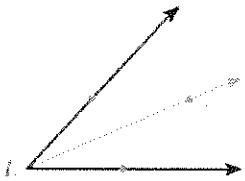
$4x + 40 = 180$

$-40 \quad -40$

$\frac{4x}{4} = \frac{140}{4}$

$\boxed{x = 35}$

6.) In the figure below, ray $\overrightarrow{EF}$ was constructed starting from rays $\overrightarrow{ED}$ and $\overrightarrow{EG}$. By using a compas *D* and *G* were marked equidistant from *E* on rays $\overrightarrow{ED}$ and $\overrightarrow{EG}$. The compass was then used to locate a point *F*, distinct from *E*, so that *F* is equidistant from *D* and *G*. For all constructions defined by the above steps, the measures of $\angle DEF$ and $\angle GEF$:



F. are equal.

Based on this construction, $\overrightarrow{EF}$ is the angle bisector

G. are NOT equal.

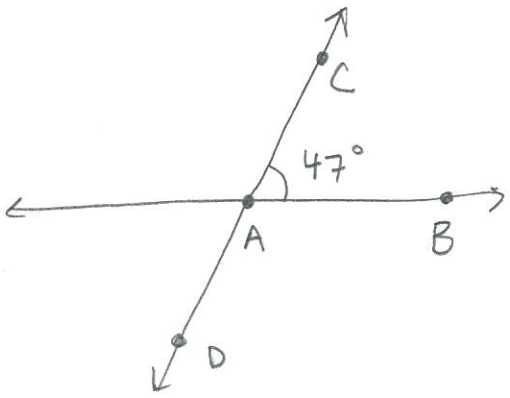
H. sum to 30°.

I. sum to 45°.

J. sum to 60°.

7.) In a plane, the distinct lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect at A, where A is between C and D. The measure of $\angle BAC$ is $47°$. What is the measure of $\angle BAD$?

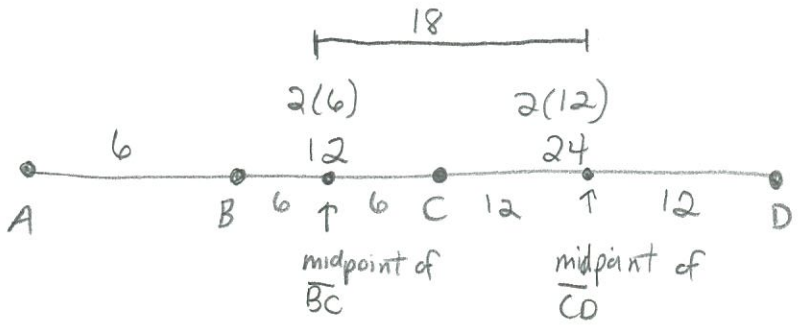
A. $43°$
B. $47°$
C. $94°$
D. $133°$
E. $137°$



$180° = 47° + m\angle BAD$
$-47° \quad -47°$
$m\angle BAD = 133°$

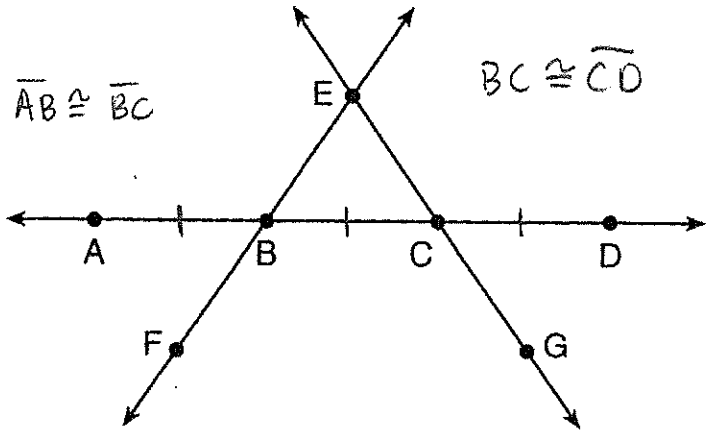
8.) **Points *A*, *B*, *C*, and *D* are on a line such that *B* is between *A* and *C*, and *C* is between *B* and *D*. The distance from *A* to *B* is 6 units. The distance from *B* to *C* is twice the distance from *A* to *B*, and the distance from *C* to *D* is twice the distance from *B* to *C*. What is the distance, in units, from the midpoint of $\overline{BC}$ to the midpoint of $\overline{CD}$?**

F. 18
G. 14
H. 12
I. 9
J. 6



9.) In the diagram below, $\overleftrightarrow{FE}$ bisects $\overline{AC}$ at B, and $\overleftrightarrow{GE}$ bisects $\overline{BD}$ at C.

(2 equal parts) (2 equal parts)



Which statement is always true?

(1) $\overline{AB} \cong \overline{DC}$

(2) $\overline{FB} \cong \overline{EB}$

(3) $\overleftrightarrow{BD}$ bisects $\overline{GE}$ at C.

(4) $\overleftrightarrow{AC}$ bisects $\overline{FE}$ at B.

10.) The supplement of an angle is 112°. What is the measure of the angle?

Supplementary Angles → add to 180°

$180° - 112° = \boxed{68°}$

11.) The complement of an angle is 22°. What is the measure of the angle?

Complementary Angles → add to 90°

$90° - 22° = \boxed{68°}$