FORMULA FORTRESS

Phase 1

1. Given A(-4,7) and B(9,3). Please find M which is the midpoint of $\overline{AB}$.

2. Using the same coordinates from #1, please find AB. Please round to the nearest tenth.

FORMULA FORTRESS

Phase 2

1. Please determine if the following segments are congruent;
   $\overline{AB}$: A(2, 6), B(0, 3)
   $\overline{CD}$: C(–1, 0), D(1, 3)

2. Given that M is the midpoint of $\overline{RS}$ and R(-4,6), M(1,-2); Please find the coordinates of point S.

FORMULA FORTRESS

Phase 3

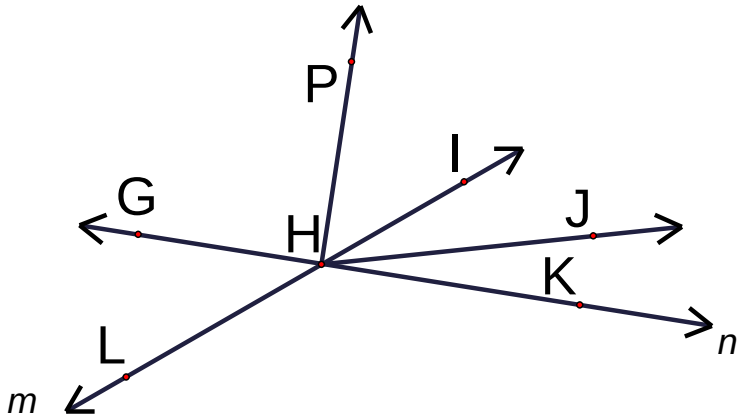
1. Given that A(-2,5) and B(7,-1) are endpoints for $\overline{AB}$, please find the midpoint of $\overline{AB}$ and verify that your midpoint is correct using the distance formula.

2. Given A(1,-2) and B(4,-1) please find the coordinates that will divide $\overline{AB}$ into four equal parts.

SKILLS HILLS

Phase 1

1. Using the picture shown, please name three points, three lines, three rays and three segments.

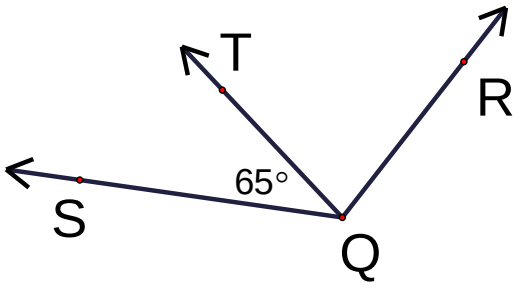


2. Using the picture above, please measure the following angles and then classify the angles as *acute, obtuse, right* or *straight*.

∠JHK ∠PHK ∠GHI ∠IHL

3. Please find DE.

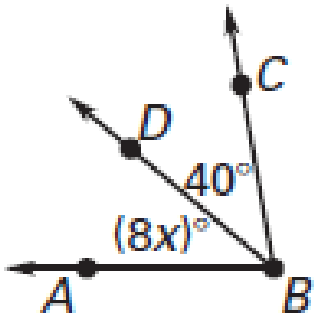
4. In the picture shown, $\overrightarrow{QT}$ is an angle bisector to ∠SQR. Please find the measure of ∠TQR and ∠SQR.



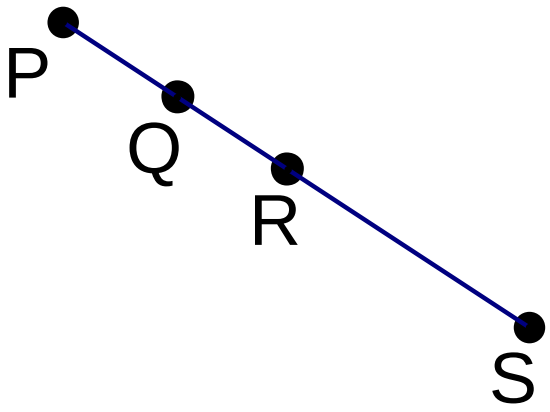
SKILLS HILLS

Phase 2

1. Given that $\overrightarrow{BD}$ bisects ∠ABC, please solve for x and verify your answer by finding the measure of ∠ABD.



2. Given that PS = 46, PR = 18, and PQ = QR. Please find the indicated lengths.



   a. PQ =

   b. QR =

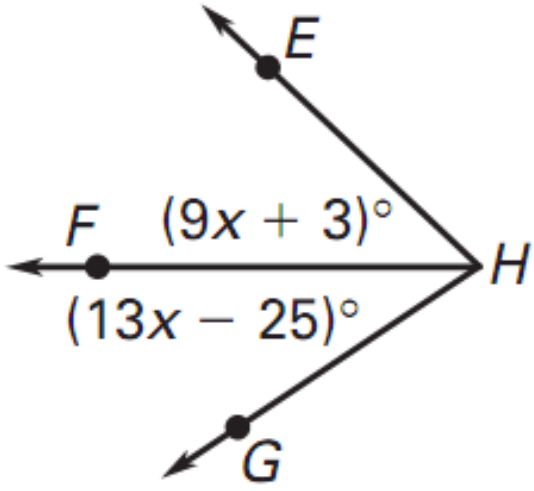
   c. QS =

   d. RS =

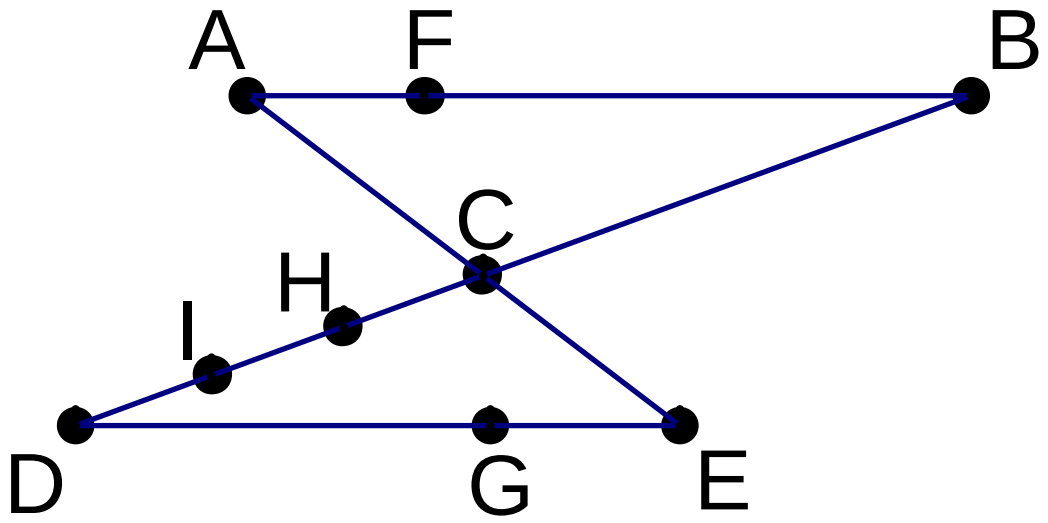
SKILLS HILLS

Phase 3

1. Given m∠EHG = 77°, please find m∠FHG.



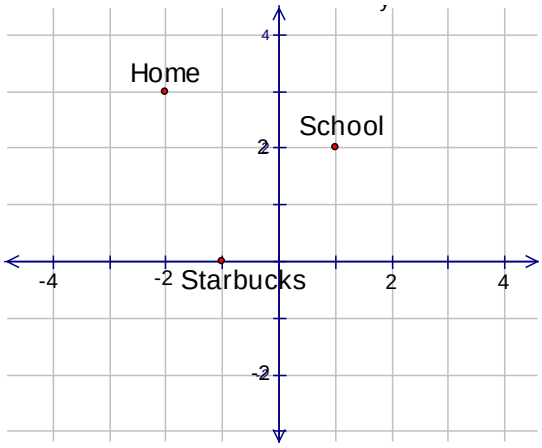
2. Given that; $\overline{AF} \cong \overline{GE}, \overline{CD} \cong \overline{CB}, \overline{CH} \cong \overline{HI} \cong \overline{ID}$, CE = ½AE, AB = CB = 12, DG = 8, and CE = 6. Please find the lengths of all the segments in the diagram.



APPLICATION NATION

Phase 1

1. In the diagram to the right, is the distance from Joan's home to school the same as the distance from Starbuck's to Joan's home? Explain.

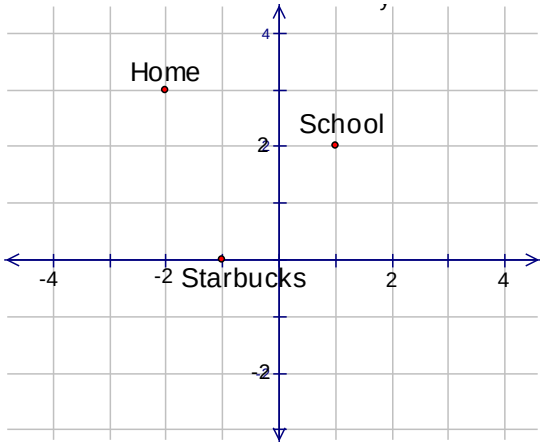


2. Let Home be point H, School be point S, and Starbucks be point B. Please find the measure of ∠HBS, classify ∠HBS; also name the vertex and sides of ∠HBS.

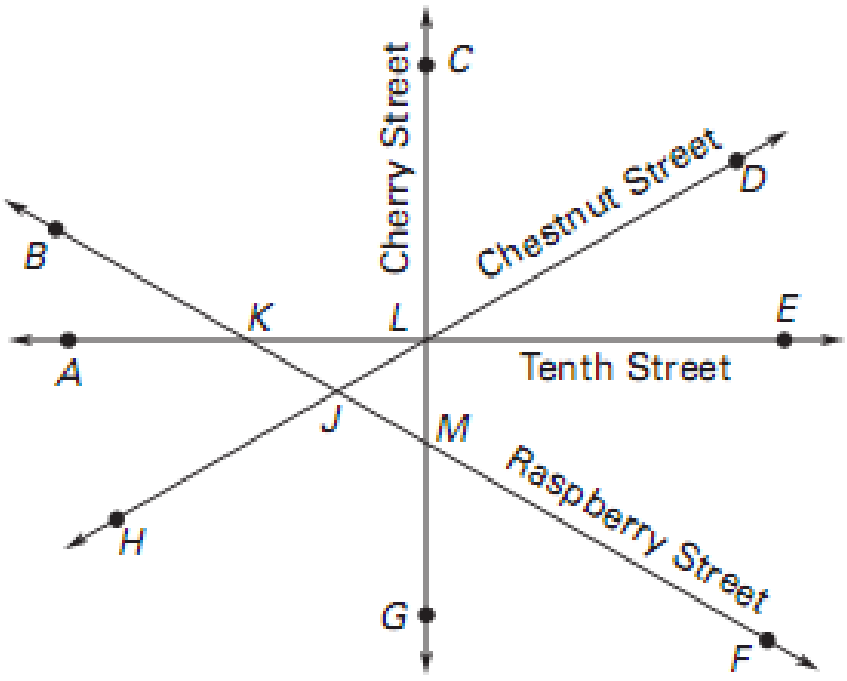
APPLICATION NATION

Phase 2

1. Joan walks from her house to school. After school, she stops at Starbucks to get a mocha chip Frappuccino, and then walks home. How far did Joan walk round trip? Show your work below.



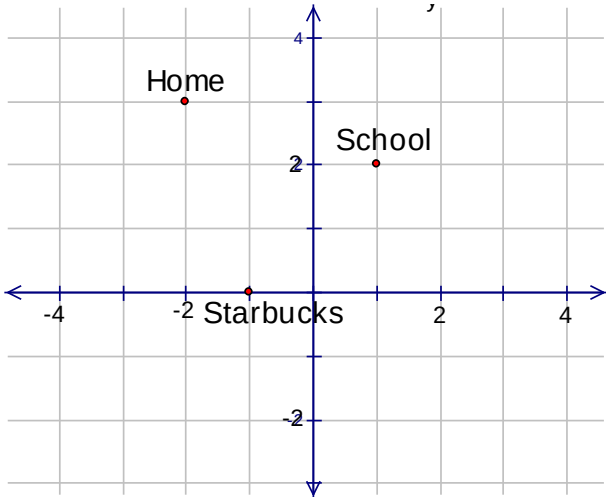
2. If $m\angle DLE = 38°$, $m\angle BKE = 153°$, $m\angle BJH = 65°$, and $m\angle CMF = 117°$, find $m\angle CLD$, $m\angle EKF$, $m\angle FJH$, $m\angle FMG$, $m\angle DJF$, and $m\angle DLG$.



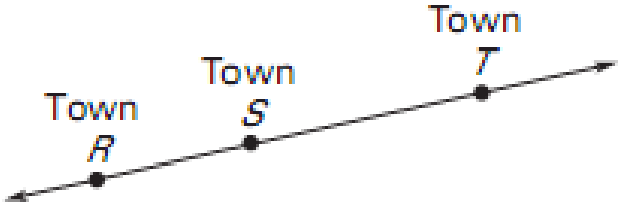
APPLICATION NATION

Phase 3

1. Please find the halfway point between Home and School; Home and Starbucks; School and Starbucks. If someone traveled from midpoint to midpoint to midpoint, how far would they go?



2. Dave is a salesperson who needs to visit towns R, S, and T. On the map below, RS = 16.4 miles and ST = 1.5(RS). Assume Dave travels along the road shown.



a. Find the distance Dave travels if he starts at Town *R*, visits Towns *S* and *T*, and then returns to Town *R*.

b. About how much time does Dave spend driving if his average driving speed is 56 miles per hour?

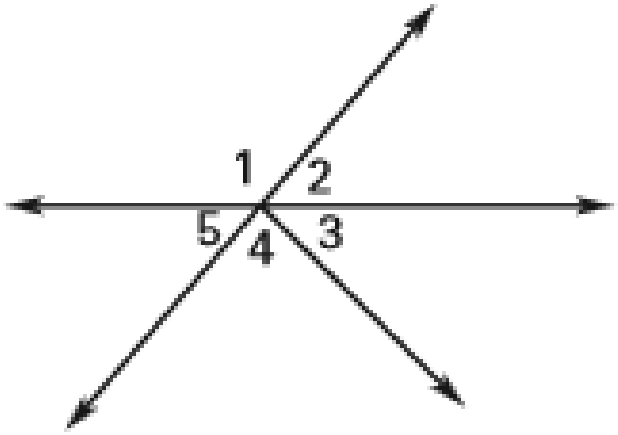
c. Dave needs to spend 1.75 hours in each town. Can he visit all three towns and return to Town *R* in an 8 hour work day? *Explain.*

ANGLE PAIR-ADISE

Phase 1

1. Given: ∠A and ∠B are complementary; ∠A and ∠C are supplementary. If m∠B = 53°, then what are the measures of ∠A and ∠C?

2. Please tell whether the angles listed are a Linear Pair, Vertical Angles or Neither.



∠1 & ∠5 _____

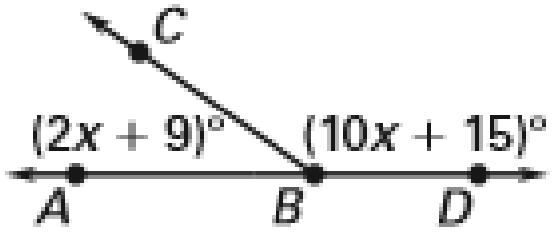
∠2 & ∠5 _____

∠1 & ∠3 _____

∠1 & ∠2 _____

∠2, ∠3 & ∠4 _____

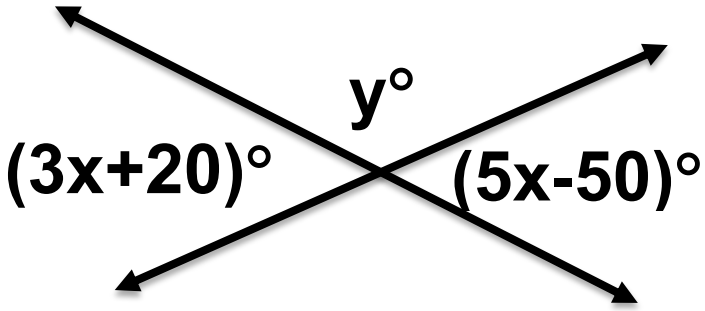
3. Please solve for x and find the m∠ABC and m∠DBC.



ANGLE PAIR-ADISE

Phase 2

1. Please solve for x and y in the diagram shown, then find the measure of each angle in the diagram.



2. If $\angle 1$ and $\angle 2$ are complementary, what are the measures of the angles when $m\angle 1 = (4x-7)^\circ$ and $m\angle 2 = (x + 12)^\circ$?

ANGLE PAIR-ADISE

Phase 3

1. We are given that m∠A is 42° greater than m∠B. ∠A and ∠B are also supplementary. Please find m∠A and m∠B.

2. Please solve for x and y in the diagram shown, then find the measure of each angle in the diagram.