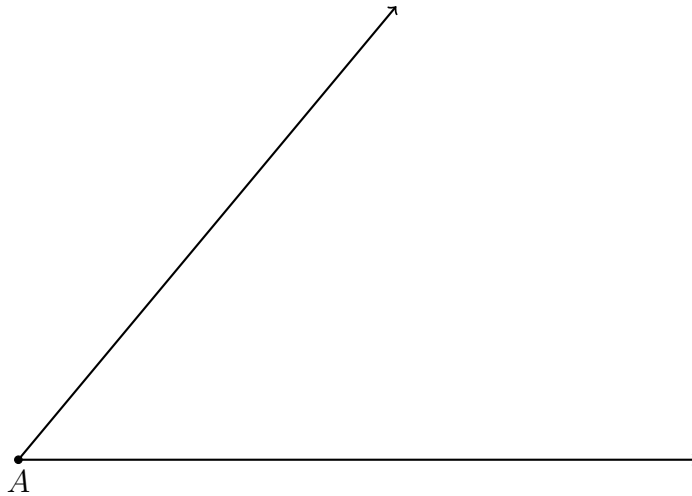


Exam 1b: Angle Pairs

1. Complete the construction of an angle bisector including the six steps.
 - (a) Given an angle with vertex A .
 - (b) Construct circle A with arbitrary radius (i.e. the radius does not matter).
 - (c) Label the intersections B and C of the angle's rays and circle A .
 - (d) Construct circle B with radius BC .
 - (e) Construct circle _____ with radius _____.
 - (f) Label D , the intersection of circle B and C .
 - (g) Draw ray _____.
 - (h) Ray \overrightarrow{AD} bisects $\angle A$.



2. Complete the construction of a perpendicular bisector including the six steps.

(a) Given the line segment \overline{PQ} .

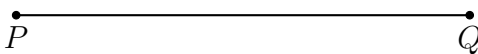
(b)

(c)

(d)

(e) Draw the line _____.

(f) The line _____ is the perpendicular bisector of \overline{PQ} .



3. Points that are all located on the same plane are _____.

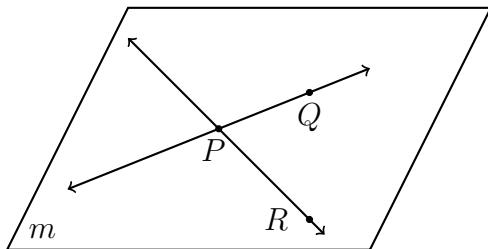
4. Given $m\angle A = 60$, $m\angle B = 40$, $m\angle 1 = 50$, $m\angle DEF = 130$, $m\angle FEG = 10$.

(a) Find a pair of complementary angles. _____

(b) Find a pair of supplementary angles. _____

(c) Spicy: Find a different pair of supplementary angles. _____

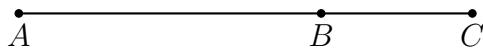
5. Identify three rays in the given plane.



6. Find the value of $|\frac{2}{3} - 2| - 1$.

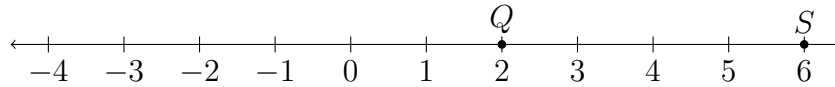
7. Given \overline{ABC} , $AC = 5.8$, and $BC = 1.4$.

(a) Find AB .

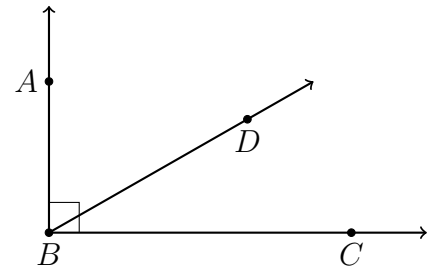


(b) The postulate used in this problem is the _____.

8. Given \overleftrightarrow{QS} as shown on the number line.

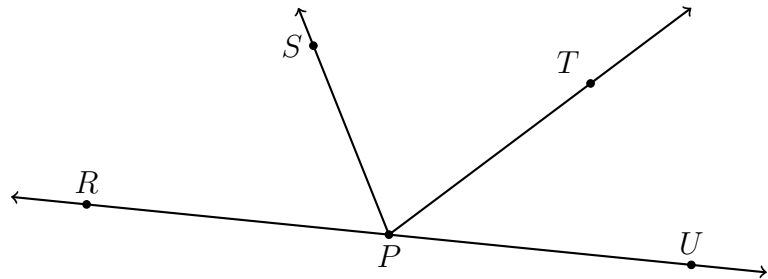


- (a) Mark the point R , the midpoint of \overline{QS} .
- (b) The point P is collinear with \overleftrightarrow{QS} such that Q is the midpoint of \overleftrightarrow{PS} . Mark P on the line.
9. Given two perpendicular rays, \overrightarrow{BA} and \overrightarrow{BC} , as shown. $m\angle ABD = 4x - 5$, $m\angle DBC = 3x - 10$. Find $m\angle DBC$. First label the drawing.

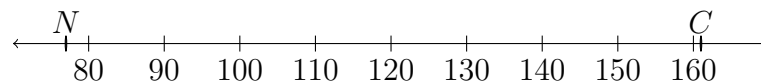


- (a) Write a geometric equation: _____
- (b) Substitute algebraic values: _____
- (c) Solve for x
- (d) Answer the question:
- (e) Check your answer

10. Given the situation in the diagram, answer each question. Circle True or False.



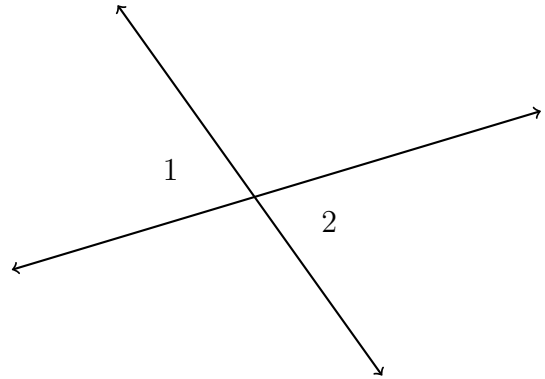
- (a) True or False: \overrightarrow{PR} and \overrightarrow{UP} are opposite rays.
- (b) True or False: $\angle TPU$ is an obtuse angle.
- (c) True or False: $\angle RPT$ and $\angle TPU$ are supplementary angles.
- (d) True or False: $\angle RPT$ and $\angle SPT$ are adjacent.
11. 4 train to Yankee Stadium: Given \overleftrightarrow{NYC} , with $N = 77$ and $C = 161$ shown on the number line.



- (a) Find the value of the midpoint Y , half way between 77 and 161.
- (b) Mark Y on the number line in the correct location.
- (c) Spicy: Find the location one-third of the distance from 86 to 161.

12. Given two vertical angles, $m\angle 1 = \frac{1}{2}(9x + 11)$, $m\angle 2 = \frac{1}{2}(7x + 41)$. Find $m\angle 1$.

(a) First label the drawing.



(b) Write a geometric equation: _____
State the reason

(c) Substitute algebraic values: _____

(d) Solve for x

(e) Answer the question:

(f) Check your answer