

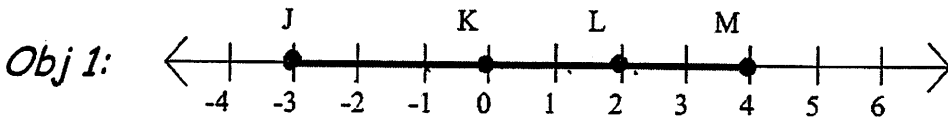
Sec 1.2: Segments, Rays + Distance (p. 12)

Obj: To determine the length of a segment by using ...

- 1) ~~Rule postulate measurement~~
- 2) Segment addition postulate
- 3) Definition of midpoint / bisects

too long - could still cut down some

Length of a segment (def) - distance between the 2 endpoints



$$JL = |-3 - 2| = |-5| = 5$$

$$= |-2 - -3| = |-1| = 1$$

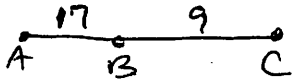
* Count or take the absolute value of the difference between the 2 coordinates!

Find $km = |2 - 4|$

$km = 2$

Segment ADDITION postulate:
 $AB + BC = AC$

Ex1
 Obj 2: B is between A and C. $AB = 17$, $BC = 9$, find AC.



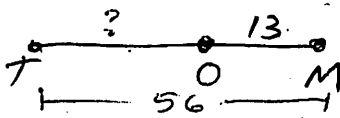
$$AB + BC = AC$$

$$17 + 9 = 26$$

$AC = 26$

Segment Addition Postulate
 $part + part = whole$

Ex2
 O is between T and M. $OM = 13$, $TM = 56$, Find TO.



$$TO + OM = TM$$

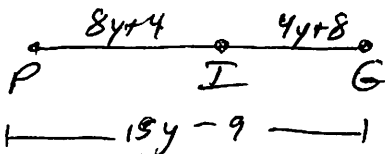
$$TO + 13 = 56$$

$TO = 43$

Adding algebra...

Ex3 I is between P and G. Find all lengths.

$$PI = 8y + 4, \quad IG = 4y + 8, \quad PG = 15y - 9$$



$$PI + IG = PG$$

$$8y + 4 + 4y + 8 = 15y - 9$$

$$12y + 12 = 15y - 9$$

$$21 = 3y$$

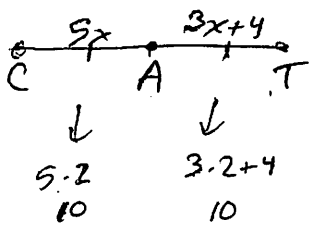
$$y = 7$$

$$\begin{aligned} PI &= 8(7) + 4 = 56 + 4 = 60 \\ IG &= 4(7) + 8 = 28 + 8 = 36 \\ PG &= 15(7) - 9 = 105 - 9 = 96 \end{aligned}$$

Ex 1

Obj 3: A is the midpoint of CT. CA = 5x and AT = 3x + 4. Find CT. = 20

make with TIC marks



MP → ÷ segment into 2 = PART
 $CA + AT = CT$ by seg. Add. post.
 $5x + 3x + 4 = ?$

CA = AT (by def of midpt)
 $5x = 3x + 4$
 $2x = 4$
 $x = 2$

Ex 2

OE bisects MI. Their point of intersection is V.

If MV = 3, MI = 6 (3+3)

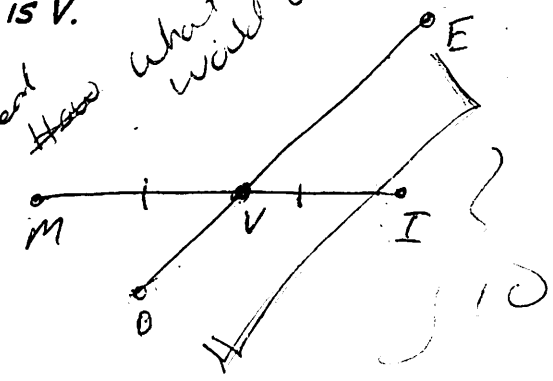
If OE = 10, VE = CBD

If MI = 15, VI = 7.5

If OV = 6, MV = CBD

cannot be determined How

what would we need



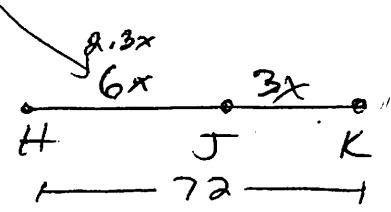
If MV = 7x - 3 and MI = 10x + 2, VI = 7(2) - 3 = 11

$MV + VI = MI$
 $7x - 3 + 7x - 3 = 10x + 2$
 $14x - 6 = 10x + 2$
 $4x = 8$
 $x = 2$

or $MV = VI$
 $7x - 3 = ?$
 $MV = VI = 7x - 3$
 $= 7(2) - 3$
 $= 14 - 3 = 11$

Ex 3

HJ is twice JK. J is between H and K. If JK = 3x and HK = 72, find JK.



$HJ + JK = HK$
 $6x + 3x = 72$
 $9x = 72$
 $x = 8$

$JK = 3x$
 $JK = 24$