Name _____ Date _____

Segment Bisectors and Congruence

1. Line RS bisects $\overline{PQ}$ at point R. Find RQ if $PQ = 14$ centimeters. 7 cm

2. Line JK bisects $\overline{MN}$ at point J. Find MN if $JM = 6\frac{3}{4}$ feet. $13\frac{1}{2}$ ft

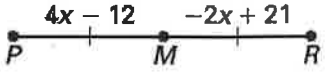
3. Point T bisects $\overline{UV}$. Find UV if $UT = 4\frac{1}{2}$ yards. 9 yds

4. Point C bisects $\overline{AB}$. Find CB if $AB = 14.8$ meters. 7.4 m

5. Find LN. 24

6. Find AM. 26

7. Find MR. 10



11. Find AM. 10

12. Find EM. 42

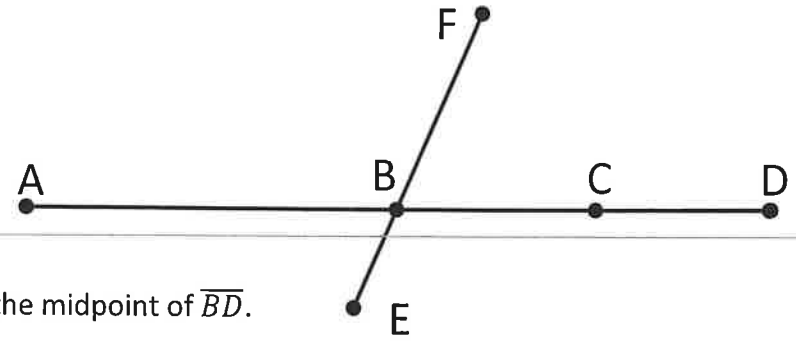
13. Find JM. 1

14. Find PR. 98

15. Find SU. 70

16. Find XZ. 146

Challenge Questions.



$\overline{EF}$ bisects $\overline{AD}$ at B. C is the midpoint of $\overline{BD}$.
CD = 3x+2
BC = y+2
AB = 12x-2
EB = y
BF = 4y+1

Find AC and EF.

$x = 1$ $y = 3$

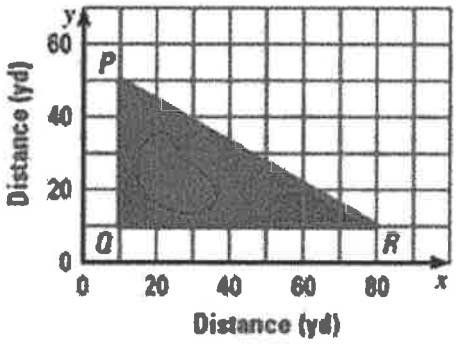
$AC = 15$ $EF = 16$

★ **EXTENDED RESPONSE** As shown, a path goes around a triangular park.

a. Find the distance around the park to the nearest yard.

b. A new path and a bridge are constructed from point Q to the midpoint M of $\overline{PR}$. Find QM to the nearest yard.

c. A man jogs from P to Q to M to R to Q and back to P at an average speed of 150 yards per minute. About how many minutes does it take? *Explain.*



A) $QP = 40$
$QR = 70$
$PR = 40^2 + 70^2 = (PR)$
$= 81$

191 yd

B) $m(45.30)$

$RM = 40$ yds

c) $P \to Q \to M \to R \to Q \to P$
40 40 40.5 70 40

230.5 yd

$\frac{150 \text{ yd}}{1 \text{ m}} = \frac{230.5 \text{ yd}}{x \text{ m}}$

$x = 1.54$ min