Use the figure at the right for Exercises 8–11.

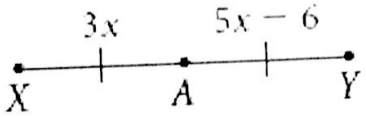
8. If $RS = 15$ and $ST = 9$, then $RT =$ ■. 24

9. If $ST = 15$ and $RT = 40$, then $RS =$ ■. 25

10. a. **Algebra** If $RS = 3x + 1$, $ST = 2x - 2$, and $RT = 64$, find the value of x.
    b. Find RS and ST. $x = 13$ $RS = 40$ $ST = 24$

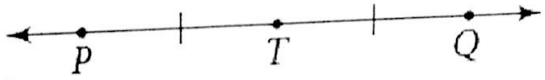
11. a. **Algebra** If $RS = 8y + 4$, $ST = 4y + 8$, and $RT = 15y - 9$, find the value of y. $y = 7$
    b. Find RS, ST, and RT. $RS = 60$ $ST = 36$ $RT = 96$

12. **Algebra** A is the midpoint of $\overline{XY}$.



    a Find XA. 9
    b. Find AY and XY. $AY = 9$ $XY = 18$

Algebra In Exercises 13–15, use the figure and find PT.



13. $PT = 5x + 3$ and $TQ = 7x - 9$ $PT = 33$

14. $PT = 4x - 6$ and $TQ = 3x + 4$ $PT = 34$

15. $PT = 7x - 24$ and $TQ = 6x - 2$ $PT = 130$

$7x - 24 = 6x - 2$
$-6x + 24 \quad -6x + 24$
$x = 22$

$PT = 7(22) - 24$
$= 130$

10a. $3x+1+2x-2=64$

$5x-1=64$

$5x=65$

$x=13$

b. $RS = 3(13)+1 = 39+1 = 40$

11a. $8y+4+4y+8=15y-9$

$12y+12=15y-9$

$-12y+9 \quad -12y+9$

$21=3y$

$7=y$

$RS = 8(7)+4 = 56+4 = 60$

$ST = 4(7)+8 = 28+8 = 36$

$RT = 15(7)-9 = 105-9 = 96$

12a. $3x=5x-6$

$-5x \quad -5x$

$\frac{-2x}{-2} = \frac{-6}{-2}$

$x=3$

$XA = 3(3) = 9$

$AY = 5(3)-6 = 15-6 = 9$

$XY = 9+9 = 18$

13. $5x+3=7x-9$

$-5x+9 \quad -5x+9$

$12=2x$

$6=x$

$PT = 5(6)+3 = 30+3 = 33$

14. $4x-6=3x+4$

$-3x+6 \quad -3x+6$

$x=10$

$PT = 4(10)-6$

$= 40-6$

$= 34$