p112 2.4
10.

$2x - 3 = 17$ Given

$2x - 3 + 3 = 17 + 3$ Addition Property of Equality

$2x = 20$ Simplify

$2x \div 2 = 20 \div 2$ Division Property of Equality

$x = 10$

12.

$AB + AD = BY$ Given

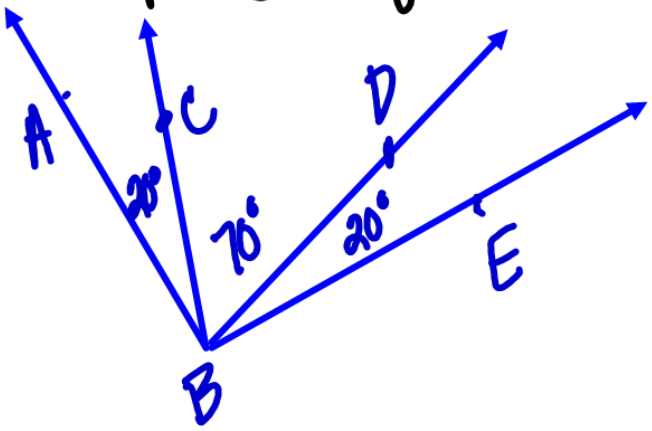
$CD + DE = BY$ Given

$XY = CD + DE$ Symmetric Property of Equality

$AB + AD = CD + DE$ Substitution Property

Transitive Property

Overlapping Angles



$\angle ABD \cong \angle CBE$

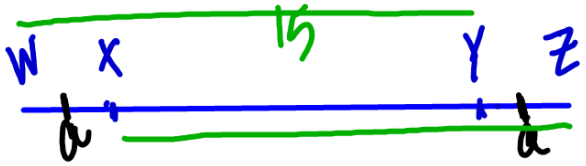
p 112

13. $m\angle MLN + m\angle NLP = m\angle MLP$

14. $m\angle NLP + m\angle PLQ = m\angle NLQ$

15. Angle Addition Postulate

21.



$WX = a$ $WY = 15$ $XZ = 15$

$WX = YZ$

$a = 2$ $a \neq -4$

22.

$WY = 9$ Quadratic

$XY = 2a+1$

$YZ = a^2$

$a^2 + 2a + 1 = 9$ -9 -9

Set $= 0$ $a^2 + 2a - 8 = 0$

1·8
2·4

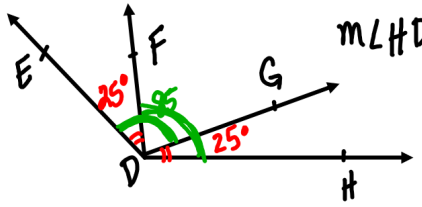
Factor $(a-2)(a+4) = 0$

Set factors $= 0$ $a - 2 = 0$ $+2$ $+2$ $\quad a + 4 = 0$ -4 -4

Solve $a = 2$ $\quad a = -4$

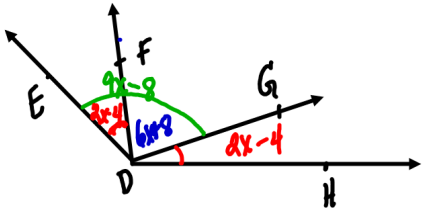
$WZ = 13$

23.



$m\angle HDF = 85°$

24.



$2x-4 + 6x+8 = 9x-8$

$8x+4 = 9x-8$ (−9x, −9x)

$-x+4 = -8$ (−4, −4)

$-x = -12$

$\frac{-x}{-1} = \frac{-12}{-1}$

$x = 12$

$m\angle HDF = 9x-8$
$= 9(12)-8$
$= 108-8$
$= 100°$

$m\angle HDG = 2x-4$
$= 2(12)-4$
$= 24-4$
$= 20°$