

pg 41: 20, 21-42 even, 52

pg 51 8-20 even, 31-42 even

20. $\angle MRS$ or $\angle SRM$ (not $\angle R$)

20. Pt P or T

28. ex $\angle W + \angle S$ (they cannot be adjacent angles)

30. 90° , right 32. 45 acute 34. 135 obtuse

36. a) ex. 3:00, 6:00, 9:00

b) ex. 4:00, 5:00, 7:00, 8:00

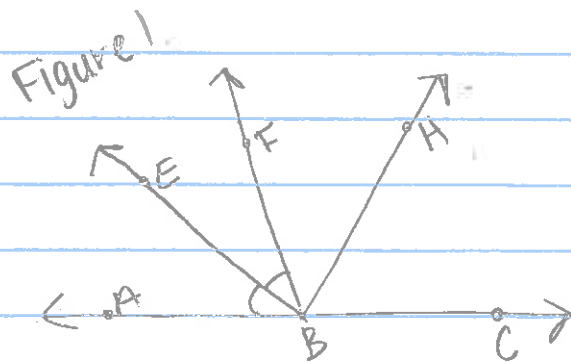
c) ex. 1:00 + 11:00

2:00 + 10:00

38. $m\angle EBH = 6x + 12$

$m\angle HBC = 8x - 10$

$m\angle EBH = ?$



Because \overrightarrow{BH} is the bisector of $\angle EBC$, $\angle EBH \cong \angle HBC$

$$6x + 12 = 8x - 10$$

$$22 = 2x$$

$$11 = x$$

$$m\angle EBH = 6(11) + 12 = 78 \quad \boxed{78}$$

$$40. m\angle EBC = 31a - 2$$

$$m\angle EBH = 4a + 45$$

find $m\angle HBC$

Since \overrightarrow{BH} bisects $\angle EBC$ into 2 congruent angles

$$\angle EBH + \angle HBC, m\angle EBH = m\angle HBC$$

Also, $m\angle EBH$ is half of $m\angle EBC$ since it was created with a bisector.

$$2 \cdot \frac{31a - 2}{2} = 4a + 45 \cdot 2$$

$$31a - 2 = 8a + 90$$

$$23a = 92$$

$$a = 4$$

$$m\angle EBH = 4(4) + 45 = 61 \text{ so } m\angle HBC = 61$$

$$42. m\angle EBC = 3r + 10$$

$$m\angle ABE = 2r - 20$$

$$m\angle EBF = ?$$

$\angle ABE + \angle EBC$ are supplementary angles

$$\text{so } 3r + 10 + 2r - 20 = 180$$

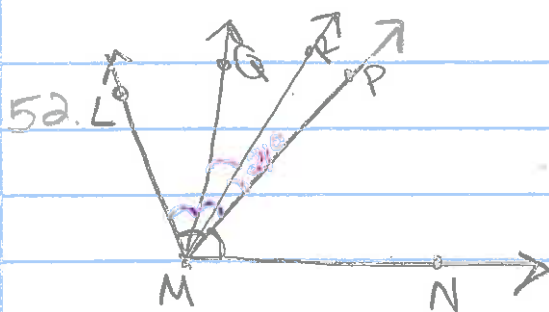
$$5r - 10 = 180$$

$$5r = 190$$

$$r = 38$$

$m\angle EBF = m\angle ABE$ (shown on figure by marks)

$$m\angle ABE = 2(38) - 20 = 56, \text{ so } m\angle EBF = 56^\circ$$



$m\angle RMP = 21^\circ$ so $m\angle QMP = 42^\circ$ so $m\angle LMP = 84^\circ$,
 so $m\angle LMN = 156^\circ$ because of angle bisector rules.

pg 51-53. P-210 even

8. $\angle HGE + \angle DGE$ (AWN)

10. $\angle HGE + \angle FGD$ (AWV)

12. $\angle BCF + \angle BAD$ (cannot have a common side)

14. $\angle BFC + \angle BFD$ (AWN)

16. $\angle JBF$ (AWV)

18. 67° north of east (AWN)

$$20. 2x + 4x + 108 = 180$$

$$6x + 108 = 180$$

$$6x = 72$$

$$x = 12$$

$$22. 2y + 6 = 8y - 102$$

$$108 = 6y$$

$$118 = y$$

$$3x + 2(18) + 6 = 180$$

$$3x + 42 = 180$$

$$3x = 138 \quad \boxed{x = 46}$$

$$24. 114 = 5x + 4$$

$$110 = 5x$$

$$\boxed{22 = x}$$

$$114 + 2y + 3(22) - 24 = 180^\circ$$

$$2y + 150 = 180$$

$$2y = 24$$

$$\boxed{y = 12}$$

$$26. \overset{\text{angle's supplement}}{\downarrow} x + (x - 70) = 180$$

$$2x - 70 = 180$$

$$2x = 250$$

$$\boxed{x = 125}$$

$$125 - 70 = \boxed{55}$$

36. yes, b/c they are nonadjacent & formed by 2 intersecting lines

38. yes, they intersect at a right angle

40. yes because $m\angle 3 + m\angle 6 = 90^\circ + m\angle 5 = 90^\circ$

42. $m\angle 2 = m\angle 4$ due to rule that vertical angles are congruent & using substitution

$$m\angle 1 = m\angle 3$$

$$m\angle 1 = m\angle 2 \text{ (vertical angles)}$$

$$m\angle 3 = m\angle 4 \text{ (vertical angles)}$$

$$\text{so } m\angle 2 = m\angle 4.$$