Answer Key to Review of Chapter 2

1. Reflexive
2. Division
3. Addition
4. Reflexive
5. Transitive
6. Subtraction
7. Distributive
8. Division
9. Subtraction
10. Symmetric
11. Distributive
12. Substitution
13. See end
14. See end
15. $4x + \frac{1}{3} = 6 \quad \text{Given}$
   $12x + 1 = 18 \quad \text{Mult.}$
16. $4x = 11 \quad \text{Subtract.}$
   $x = \frac{11}{4} \quad \text{Division}$
17. $8x = 6 \quad \text{Addition}$
   $4x = -3 \quad \text{Division}$
   $x = -\frac{3}{4} \quad \text{Division}$
   $AC = AB \quad \text{Given}$
   $AC = 4x + 1 \quad \text{Given}$
   $AB = 6x - 13 \quad \text{Given}$
18. $4x + 1 = 6x - 13 \quad \text{Substitution}$
   $-2x + 1 = -13 \quad \text{Subtraction}$
   $-2x = -14 \quad \text{Subtraction}$
   $x = 7 \quad \text{Division}$
19. See end
20. See end
21. See end
22. See end
23. $x = 6, m\angle 5 = 40^\circ$
24. $m\angle XWZ = 106^\circ$
25. $x = 30, m\angle 5 = 28^\circ$
26. $x = 30, m\angle 7 = 50^\circ, m\angle 8 = 70^\circ, m\angle 9 = 60^\circ$
27. $x = 58, m\angle 5 = 58^\circ$
28. $x = 45, m\angle 1 = 86^\circ, m\angle 2 = 94^\circ$
29. If angles are complementary, then their sum is 90. If 2 angles sum is 90, then they are complementary. If angles are not complementary, then their sum is not 90. If 2 angles sum is not 90, then they are not complementary.
30. If you like hockey, then you go to the hockey game. If you go to the hockey game, then you like hockey. If you do not like hockey, then you do not go to the hockey game. If you do not go to the hockey game, then you do not like hockey.
31. Law of Detachment
32. Invalid
33. Law of Syllogism
34. If a rectangle has 4 equal sides, then it is a regular polygon. Law of Syllogism
35. $\angle A$ is a right angle. Law of Detachment
36. The correct conclusion should be “Angles C and D are linear pair, so the angles are supplementary.”
13) Given: T is between Q and J. \( QT = KJ \)
Prove: \( KJ + TJ = QJ \)

14) Given: M is the midpoint of \( YF \)
F is the midpoint of \( MD \)
Prove: \( 3YM = YD \)

19) Given: \( RD = HK \)
Prove: \( RK = HD \)
20) Given: $m\angle SWR = m\angle HWF$
Prove: $m\angle SWF = m\angle RWH$

\[
m\angle SWR = m\angle SWF + m\angle FWR
\]

Angle add. Post.

\[
m\angle SWF + m\angle FWR = m\angle FWR + m\angle RWH
\]

Substitution Prop.

\[
m\angle SWF = m\angle RWH
\]

Subtraction Prop.

21) Given: line $w$ bisects $\overline{TB}$.
Prove: $TA = AB$.

Line $w$ bisects $\overline{TB}$

Given

A is the midpoint

Def. of Seg. Bisector

$TA = AB$

Def. of Midpoint

22) Given: $DP = OP$,
Prove: $GP$ is a segment bisector.

$DP = OP$

Given

P is the midpoint of DO

Def. of Midpoint

$GP$ is a segment bisector

Def. of Seg. Bisector