2.1 Classifying Triangles

1a. Acute Isosceles
b. Right Isosceles
c. Obtuse
d. Right
e. Obtuse Isosceles
f. Acute Scalene

2a. Sometimes
b. Sometimes
c. Always
d. always
e Never

3. $180 - 90 - 42 = m\angle 1$
$m\angle 1 = 48°$

4. $m\angle 1 = 50°$
$m\angle 2 = 40°$
$m\angle 3 = 45°$

5. $m\angle 1 = 79°$
$m\angle 2 = 51°$
$m\angle 3 = 39°$

6a. $\overline{MN}$ and $\overline{NL}$ = Legs
$\overline{ML}$ = hypotenuse

b. 45° to 60°

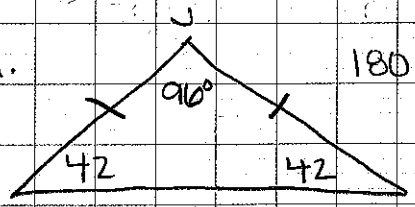
7a. $\angle T$
b. $\overline{CA}$
c. $\triangle CAB$
d. $UV =$
e. $m\angle A = 46°$

8. $\triangle ABC \cong \triangle TUV$

(C) (D) (B)

9. $4y - 4 = 28$ $\quad 10x + 65 = 135$
$4y = 32$ $\quad 10x = 70$
$y = 8$ $\quad x = 7$

10. $\angle X = \angle R = 70°$
$4a - 4 = 48$ $\quad 5b - 3 = 62$
$4a = 52$ $\quad 5b = 65$
$a = 13$ $\quad b = 13$

11. 

$180 - (42 + 42)$
$96°$
(C)

12. $m\angle BCD = 35 + 90$
$m\angle BCD = 125°$
(D)

2.2 Homework

1a. $\measuredangle JKL$ or $\measuredangle LKJ$

b. $\measuredangle PKL$ or $\measuredangle LKP$

c. $\measuredangle KLP$ $\measuredangle PLK$

d. $\measuredangle KJL$ $\measuredangle LJK$

e. $\measuredangle KLJ$ $\measuredangle JLK$

f. $\measuredangle KPL$ $\measuredangle LPK$

11. (B)

12. (B)

2. Not enough info

3. SAS or HL

4. SSS

5. SAS

6. Not enough info

7. SSS

8. 1. Given
   2. Given
   3. Reflexive prop
   4. SSS $\cong$

9.

Statement	Reason
1. $\overline{NP} \cong \overline{QN} \cong \overline{RS} \cong \overline{TR}$	1. Given
2. $\overline{PQ} \cong \overline{ST}$	2. Given
3. $\triangle NPQ \cong \triangle RST$	3. SSS $\cong$

10.

Statement	Reason
1. $\overline{AB} \cong \overline{CD}$	1. Given
2. $\overline{AB} \parallel \overline{CD}$	2. Given
3. $\measuredangle 1 \cong \measuredangle 2$	3. Alt. int. $\measuredangle$s
4. $\overline{AC} \cong \overline{AC}$	4. reflexive prop
5. $\triangle ABC \cong \triangle$	5. SAS $\cong$

2.3 Homework

1a. ASA
b. SAS
c. AAS
d. NOT enough info
e. Not enough info
f. SSS

2.

1. Given	
2. Given	
3. $\angle W \cong \angle W$	
4. AAS $\cong$	
5. CPCTC	by SAA
6. CPCTC	by SSS
7. CPCTC	by AAS

3.

Statement	Reason
1. $\overline{FH} \parallel \overline{LK}$	1. Given
2. $\overline{GF} \cong \overline{GL}$	2. Given
3. $\angle FGH \cong \angle KGL$	3. Vertical $\angle$s
4. $\angle F \cong \angle L$	4. Alt. Int. $\angle$s
5. $\triangle FGH \cong \triangle LGK$	5. ASA $\cong$

4.

Statement	Reason
1. $\overline{AB} \perp \overline{AD}$, $\overline{DE} \perp \overline{AD}$	1. Given
2. $\overline{BC} \cong \overline{EC}$	2. Given
3. $\angle ACB \cong \angle ECD$	3. Vertical $\angle$s
4. $\angle A$ & $\angle D$ are right $\angle$s	4. Def. of $\perp$
5. $\angle A \cong \angle D$	5. Right $\angle$s are $\cong$
6. $\triangle ABC \cong \triangle DEC$	6. AAS $\cong$

5.

Statement	Reason
1. $\angle TQS \cong \angle RSQ$, $\angle R \cong \angle T$	1. Given
2. $\overline{QS} \cong \overline{QS}$	2. Reflexive
3. $\triangle TQS \cong \triangle RSQ$	3. AAS $\cong$

9. 2. Def. of midpoint
5. Corresponding $\angle$s
6. $\triangle ABC \cong \triangle BDE$
7. CPCTC

10.

Statement	Reason
1. $\overline{UR} \parallel \overline{ST}$, $\angle R$ & $\angle T$ are right $\angle$s	1. Given
2. $\angle R \cong \angle T$	2. Right $\angle$s are $\cong$
3. $\overline{US} \cong \overline{US}$	3. Reflexive
4. $\angle RUS \cong \angle TSU$	4. Alt. int. $\angle$s
5. $\triangle RUS \cong \triangle TSU$	5. AAS
6. $\angle RSU \cong \angle TUS$	6. CPCTC

11. (B)

12. (A)

2.4 Homework

1a. SSS ≅

b. SSA = Donkey → NO

c. ASA

d. SAS

e. AAS

f. NO

2. $X = 60°$

$y = 60$

3. $2x + 75 = 180$

$2x = 105$

$x = 52.5°$

$y = 75°$

4. $40 + 40 + x = 180$

$x + 80 = 180$

$x = 100°$

$y = 140°$

5. $60 + x = 90$

$x = 30°$

$30 + 30 + y = 180$

$60 + y = 180$

$y = 120°$

6. $180 - 40 = 140$

$2x + 140 = 180$

$2x = 40$

$90 - 20 = 70$

$70 + 40 + y = 180$

$110 + y = 180$

7. $x = 60°$

$60 + 90 + y = 180$

$150 + y = 180$

$y = 30°$

8a. $VT = 8$

b. $SR = 17$

c. U is the vertex of the isosceles △ RUT.

9a. $NQ = 2$

b. M will lie on $\overrightarrow{JN}$, and be equidistant from $\overrightarrow{JH}$ and $\overrightarrow{JK}$

10. The post is a ⊥ bisector to the frame of the plane.

11. $x + 40 = 2x + 6$

$34 = x$

12. $4x + 70 = 10x + 22$

$48 = 6x$

$x = 8$

2.6 Homework

1. a) $\overline{BC}$
   b) $\overline{MN}$
   c) 10
   d) 14
   e) 9

2. $2(3x+7) = 7x+6$
   $6x+14 = 7x+6$
   $6x+8 = 7x$
   $8 = x$
   $LM = 31$

3. $2(x-1) = 6x-18$
   $2x-2 = 6x-18$
   $2x+16 = 6x$
   $16 = 4x$
   $x = 4$
   $AB = 6$

4. $2(19.5) = x^2+10x$
   $39 = x^2+10x$
   $x^2+10x-39 = 0$

-39	$(x+13)(x-3)=0$
13×-3	$x=-13 \quad x=3$
10	

5. $x^2 = 2(5x+12)$
   $x^2 = 10x+24$
   $x^2-10x-24 = 0$

-24	$(x-12)(x+2)=0$

6. $\overline{AB}$, $\overline{BC}$, $\overline{AC}$

7. $\angle L$, $\angle K$, $\angle M$

8. $x+2+x+3 > 3x-2$
   $2x+5 > 3x-2$
   $2x+7 > 3x$
   $7 > x$
   $x < 7$

9. $x+2+x+4 > 3x-1$
   $2x+6 > 3x-1$
   $2x+7 > 3x$
   $7 > x$
   $x < 7$

10. When you add to sides of a Δ (pine st & union st), the distance is longer than the 3rd side (wt thru).

11. a) The longest side is not across from the largest $\angle$.
    b) no. $5+3 > 9$
    $8 > 9$ X

12. $2|x-5|+6 \geq 12$
    $2|x-5| \geq 6$ $(-\infty, 2) \cup (8, \infty)$