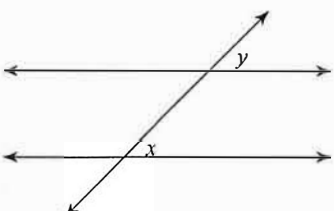
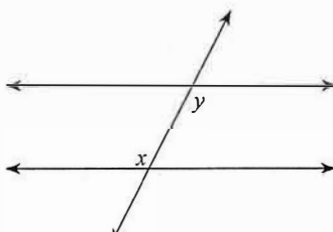


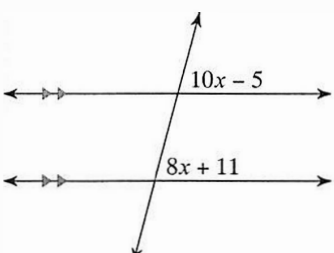
Pre-Chapter 6 Practice Test

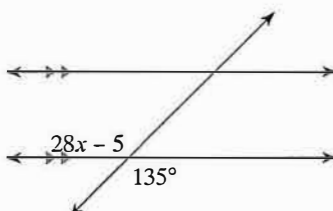
Identify each pair of angles as corresponding, alternate interior, alternate exterior, same-side interior, vertical, or linear pair.

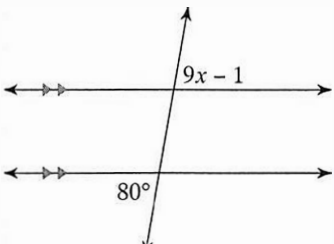
1)  corresponding

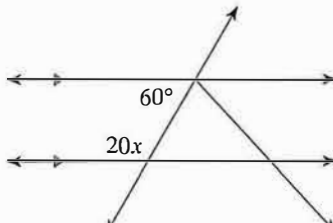
2)  Alternate interior

Solve for x. State which theorem or postulate you used. (note: \angle s = angles, thm = theorem)

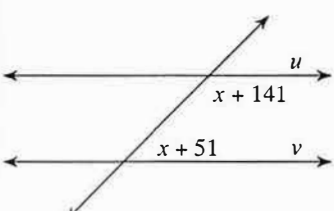
3)  $x = 8$
corr. angles postulate

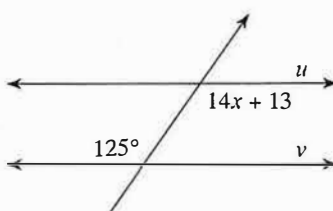
4)  $x = 5$
vertical \angle s thm

5)  $x = 9$
alt. ext. \angle s thm

6)  $x = 6$
same-side int. \angle s thm

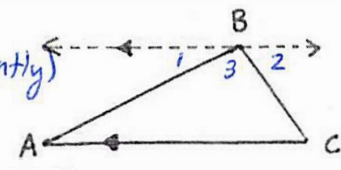
Find the value of x that makes lines u and v parallel. State which postulate or theorem you used.

7)  $x = -6$
Same-side int. \angle s thm converse

8)  $x = 8$
alt. int. \angle s thm converse

Write a two-column proof for the Triangle Angle Sum Theorem

(your proof might look slightly different if you labeled differently)
9) Given $\triangle ABC$, prove $m\angle A + m\angle B + m\angle C = 180^\circ$

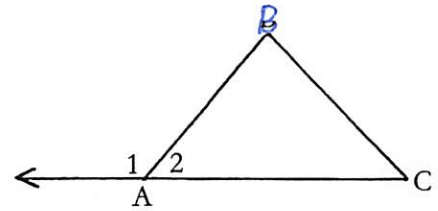


Statements	Reasons
1. $\triangle ABC$	1. Given
2. Draw a line parallel to \overline{AC} through point B	2. Parallel Postulate
3. $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$	3. supplementary angles
4. $\angle 1 \cong \angle A$	(see key with work for reasons :))
5. $\angle 2 \cong \angle C$	(or look at your 6.0C notes)
6. $m\angle A + m\angle B + m\angle C = 180^\circ$	

Statements	Reasons
1. $\triangle ABC$	1. Given
2. Draw a line parallel to \overline{AC} through point B	2. Parallel Postulate
3. $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$	3. supplementary angles
4. $\angle 1 \cong \angle A$	(see key with work for reasons :))
5. $\angle 2 \cong \angle C$	(or look at your 6.0C notes)
6. $m\angle A + m\angle B + m\angle C = 180^\circ$	

Write a two-column proof for the exterior angle theorem.

10) Given $\triangle ABC$, prove that $m\angle 1 = m\angle B + m\angle C$.



statements

1. $\triangle ABC$
2. $m\angle 2 + m\angle B + m\angle C = 180^\circ$
3. $m\angle 2 + m\angle 1 = 180^\circ$
4. $m\angle 2 + m\angle B + m\angle C = m\angle 2 + m\angle 1$
5. $m\angle B + m\angle C = m\angle 1$

Reasons

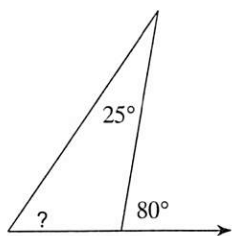
See if you can figure it out from here! :)

(Reasons are on the key with work)

(Also, this proof was on your notes)

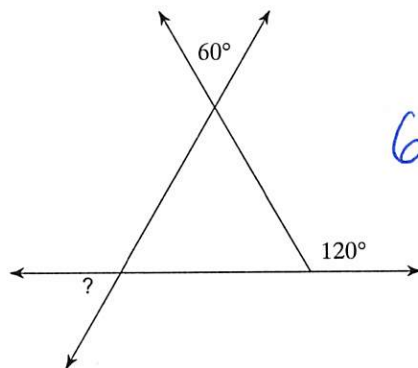
Find the measure of each angle indicated.

11)



55°

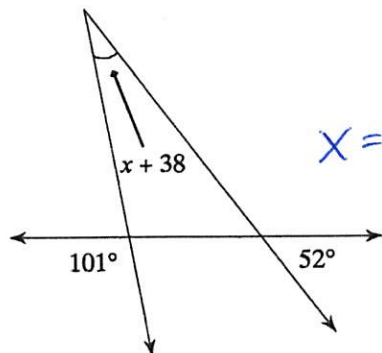
12)



60°

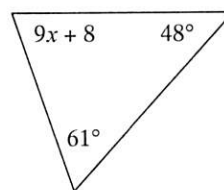
Solve for x .

13)



$x = -11$

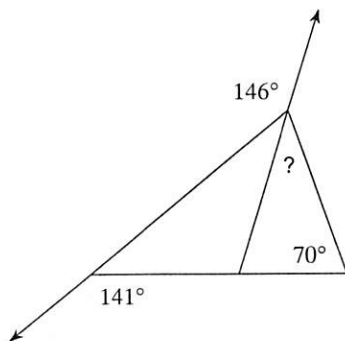
14)



$x = 7$

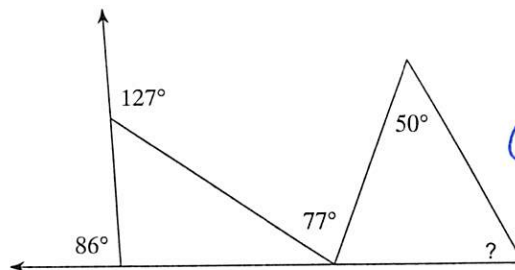
Find the measure of each angle indicated.

15)



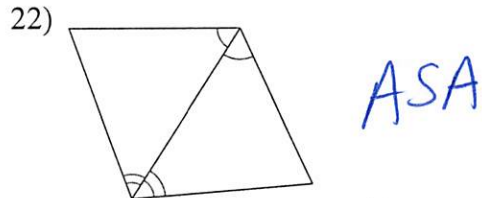
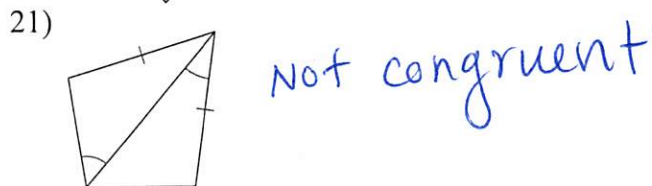
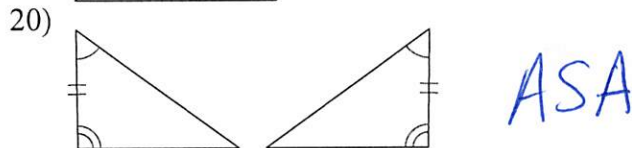
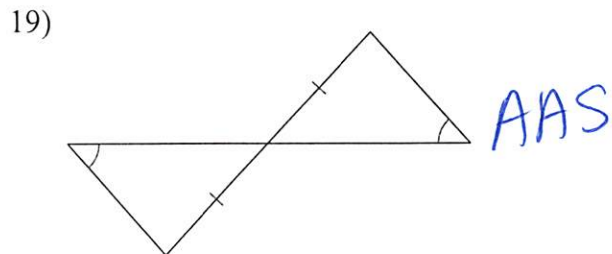
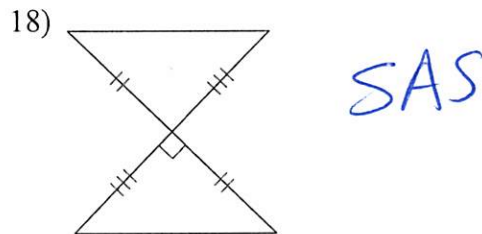
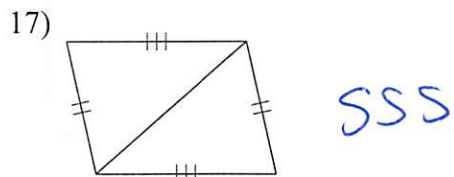
37°

16)



60°

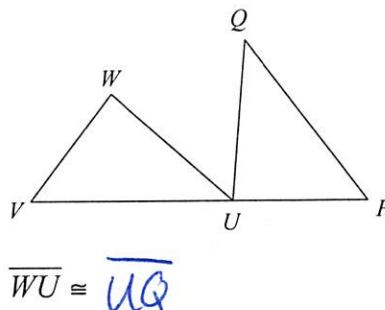
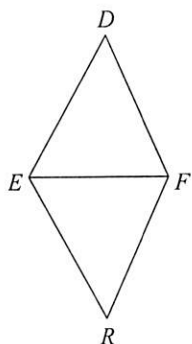
State if the two triangles are congruent. If they are, state how you know.



Complete each congruence statement by naming the corresponding angle or side.

23) $\triangle FED \cong \triangle FER$

24) $\triangle VWU \cong \triangle PUQ$



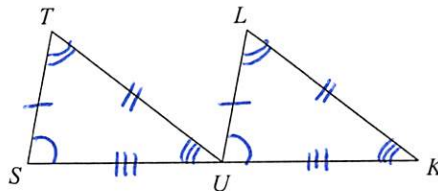
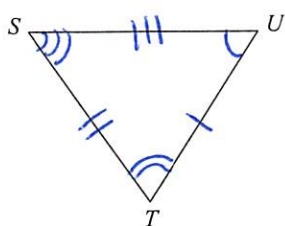
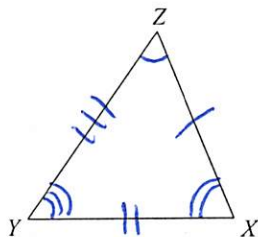
$\angle DFE \cong \angle RFE$

$\overline{WU} \cong \overline{UQ}$

Mark the angles and sides of each pair of triangles to indicate that they are congruent.

25) $\triangle ZXY \cong \triangle UTS$

26) $\triangle STU \cong \triangle ULK$



Write a statement that indicates that the triangles in each pair are congruent.

27) $\Delta FED \cong \Delta FVU$
 (multiple ways to write, like $\Delta EDF \cong \Delta UVF$, letters just have to match up same way)

28) $\Delta WXV \cong \Delta VTS$

Find the value of x .

29) $x = 45^\circ$

30) $m\angle 2 = 10x$
 $x = 6$

31) $x = 10$

32) $x = 6$

33) Write the slope formula.

$$\frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} \text{ or } \frac{\text{rise}}{\text{run}}$$

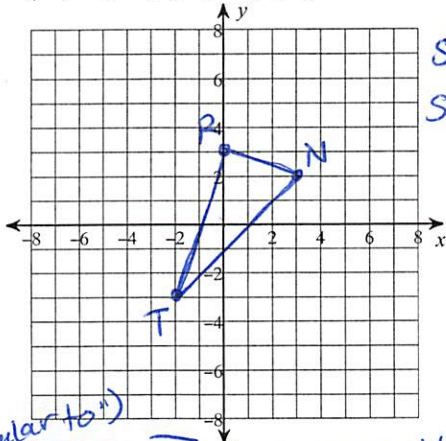
34) Write the distance formula.

(or pythagorean theorem solved for c)

$$c = \sqrt{a^2 + b^2} \text{ or } d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

35) Prove that ΔTRN is a right triangle.

$T(-2, -3)$ $R(0, 3)$ $N(3, 2)$

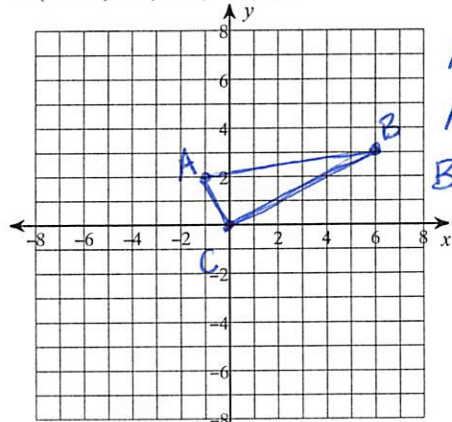


Slope $\overline{TR} = 3$
 Slope $\overline{RN} = -\frac{1}{3}$
 (should show work)

(\perp means "perpendicular to")
 $\overline{TR} \perp \overline{RN}$ because they have opposite reciprocal slopes.
 Therefore ΔTRN is a right triangle.

36) Prove whether ΔABC is isosceles, equilateral, or scalene.

$A(-1, 2)$ $B(6, 3)$ $C(0, 0)$



$AB = 5\sqrt{2}$ ($\sqrt{50}$)
 $AC = \sqrt{5}$
 $BC = 3\sqrt{5}$ ($\sqrt{45}$)

ΔABC is scalene because all 3 sides have different lengths.

Finish the syllogism.

37) Pizza is good for you. Food that is good for you tastes like cardboard.

pizza tastes like cardboard

38) If Steve goes to class, he can turn his homework in on time.

If Steve turns his homework in on time, he will get better grades.

If Steve goes to class, then he will get better grades.

Write a syllogism of your own.

(Example)

39) If you do the work before checking the key, you'll understand more.

If you understand more, you'll do better on the test.

If you do the work before checking the key, you'll do better on the test. 😊

40) List the three "postulates" of Uno.

1) same color

2) same number

3) change color (wild)

Write a formal two-column proof.

Uno Proofs

41) Given: Green 3

Prove: Yellow 10

Using: Blue 3, Blue 10, Red 3

statements	Reasons
1. G3	1. Given
2. R3	2. same #
3. B3	3. same #
4. B10	4. same color
5. Y10	5. same #

42) Given: Red Skip

Prove: Blue 3

Using: Blue 7, Green Reverse, Red 4, Blue

Reverse, Red Reverse

statements	Reasons
1. R skip	1. Given
2. R4	2. same color
3. R Reverse	3. same color
4. G Reverse	4. same "number"
5. B Reverse	5. same #
6. B7	6. same color
7. B3	7. same color

Algebraic Proofs

43) Given: $8x - 5 = 2x + 1$

Prove: $x = 1$

Statements	Reasons
1. $8x - 5 = 2x + 1$	1. Given
2. $6x - 5 = 1$	2. subtraction prop.
3. $6x = 6$	3. addition prop.
4. $x = 1$	4. division prop.

44) Given: $6x + 2(x - 1) = 30$

Prove: $x = 4$

statements	Reasons
1. $6x + 2(x - 1) = 30$	1. Given
2. $6x + 2x - 2 = 30$	2. Distributive
3. $8x - 2 = 30$	3. Combine like terms or simplify or substi- tution
4. $8x = 32$	4. addition
5. $x = 4$	5. division

45) Given: $\frac{4x+6}{2} = 9$

Prove: $x = 3$

Statements	Reasons
1. $\frac{4x+6}{2} = 9$	1. Given
2. $4x+6 = 18$	2. multiplication prop.
3. $4x = 12$	3. subtraction OR
4. $x = 3$	4. Division

Statements	Reasons
1. $\frac{4x+6}{2} = 9$	1. Given
2. $2x+3 = 9$	2. simplify or substitution
3. $2x = 6$	3. subtraction
4. $x = 3$	4. Division

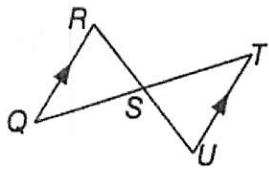
(multiple ways to do the proofs)

Congruent Triangles → I want to give you more chances to figure things out so reasons are on key with work

46) Given: S is the midpoint of \overline{QT} .

$\overline{QR} \parallel \overline{TU}$

Prove: $\triangle QSR \cong \triangle TSU$



Statements	Reasons
1. S is midpoint of \overline{QT}	
2. $\overline{QS} \cong \overline{TS}$	
3. $\angle QSR \cong \angle TSU$	
4. $\overline{QR} \parallel \overline{TU}$	
5. $\angle R \cong \angle U$	
6. $\triangle QSR \cong \triangle TSU$	

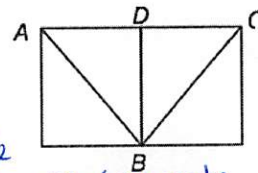
see key with work (after you've tried to figure it out!)

or $\angle Q \cong \angle T$ → (for same reason) see key with work for detailed explanation

47) Given: $\overline{AC} \perp \overline{BD}$

\overline{BD} bisects \overline{AC}

Prove: $\triangle ABD \cong \triangle CBD$



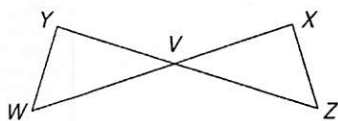
Statements	Reasons
1. $\overline{AC} \perp \overline{BD}$	1. Given
2. $\angle ADB \cong \angle CDB$	2. Both 90° (def. of perpendicular)
3. \overline{BD} bisects \overline{AC}	
4. $\overline{AD} \cong \overline{CD}$	
5. $\overline{BD} \cong \overline{BD}$	
6. $\triangle ABD \cong \triangle CBD$	

see key with work

48) Given: V is the midpoint of \overline{YZ}

$\angle W \cong \angle X$

Prove: $\overline{YW} \cong \overline{ZX}$



Statements	Reasons
1. $\angle W \cong \angle X$	
2. V is the midpoint of \overline{YZ}	
3. $\overline{YV} \cong \overline{ZV}$	
4. $\angle WVY \cong \angle XVZ$	
5. $\triangle WVY \cong \triangle XVZ$	
6. $\overline{YW} \cong \overline{ZX}$	

see key with work