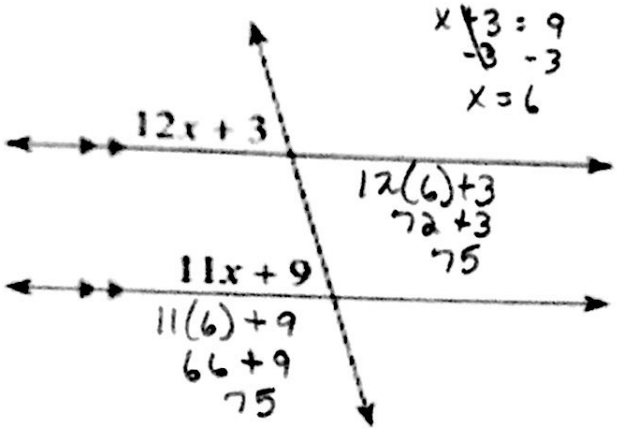


$12x+3 = 11x+9$
$-11x \quad -11x$
$x+3 = 9$
$-3 \quad -3$
$x = 6$

$12(6)+3$
$72+3$
75

$11(6)+9$
$66+9$
75

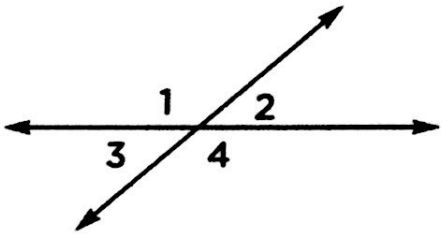
8. What is the relationship between these angles? Corresponding

9. Solve for x. x = 6

10. What is the measure of each angle given?

12x+3 = 75 11x+9 = 75

Use the figure on the right to answer each question below.



11. Angle 1 is called a n obtuse angle.
    a. Acute (b. Obtuse) c. Right d. Straight
12. Angle 2 is called an acute angle.
    (a. Acute) b. Obtuse c. Right d. Straight
13. Angles 2 and 3 are called vertical angles.
    a. Complementary b. Supplementary (c. Vertical) d. Adjacent
14. If the measure of angle 1 was 130°, what would the measure of angle 2 be? B. 50°
    a. 130° (b. 50°) c. 20° d. 90°

$180 - 130 = 50$

15. If the measure of angle 3 was 70°, what would the measure of angle 2 be? A. 70°
    (a. 70°) b. 20° c. 50° d. 90°

$\angle 3 = \angle 2$

Identify (circle YES or NO) whether the three angles given would create triangle. Give a reason to support your answer.

16. 25°, 75°, 85° YES or (NO) Reason: $25+75+85 = 185$ Sum must equal 180°.
17. 50°, 30°, 100° (YES) or NO Reason: $50+30+100 = 180$

18. If two sides of a triangle are 1 cm and 3 cm, the third side may be...
    (a) 5 cm (b) 2 cm (c) 3 cm (d) 4 cm

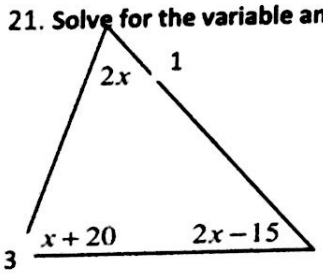
@ $1+3 = 4 > 3$
* not (b) because $1+2 = 3 \not> 3$ *

19. Based on the side lengths, name the triangle from Question 18. Isosceles

20. If the lengths of two sides of a triangle are 5 in and 7 in, the length of the third side may *not* be...
    (a) 12 in (b) 7 in (c) 3 in (d) 5 in

$5+7 = 12 \not> 12$

21. **Solve for the variable and use it to identify the missing angle measures of each triangle.**



Angle 1 = 70° Angle 2 = 55° Angle 3 = 55°

$2x + x + 20 + 2x - 15 = 180$
$5x + 5 = 180$
$-5 \quad -5$
$\frac{5x}{5} = \frac{175}{5}$
$x = 35$

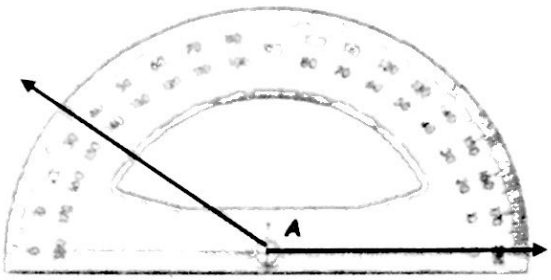
∠1	∠2	∠3
2(35)	2(35)−15	35+20
70°	70−15	55°
	55°	

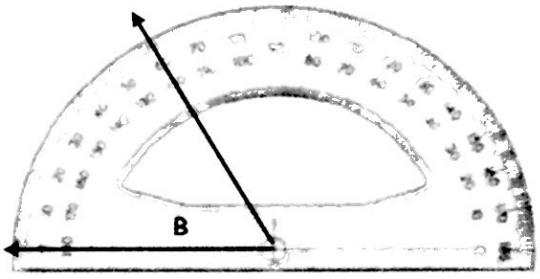
Name: Key Date: Period:

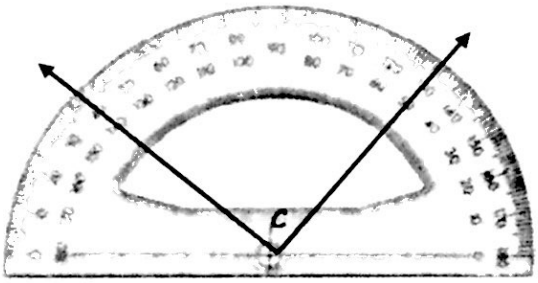
Calculator Inactive

Math 7+ UNIT 9 Geometric Properties Unit Review

Classify each angle shown and write the given measures in the answer box provided.





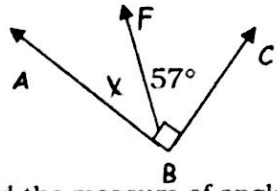


Final Answers

1. Acute Angle: B
2. Obtuse Angle: A
3. Right Angle: C
4. *m* of angle A: 145°
5. *m* of angle B: 60°
6. *m* of angle C: 90°

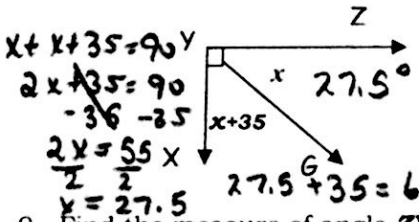
Find the missing angle measurement. Then identify each set of angles as complementary or supplementary by circling the correct identification.

DO NOT USE A PROTRACTOR on #7 – 14.



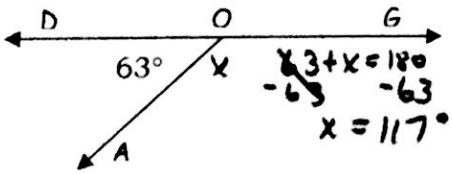
$x + 57 = 90$
$-57 \quad -57$
$x = 33°$

7. Find the measure of angle ***FBA***.
8. Are angle ABF and angle FBC Complementary or Supplementary?



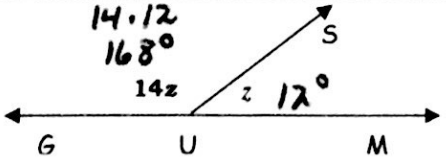
$x + x + 35 = 90$
$2x + 35 = 90$
$-35 \quad -35$
$\frac{2x}{2} = \frac{55}{2}$
$x = 27.5$
$27.5 + 35 = 62.5$

9. Find the measure of angle ***ZYG***.
10. Find the measure of angle ***GYX***



$63 + x = 180$
$-63 \quad -63$
$x = 117°$

11. Find the measure of angle ***GOA***.
12. Are angle DOA and angle AOG Complementary or Supplementary?



$14 \cdot 12$
$168°$

13. Find the measure of angle ***SUM***.
14. Find the measure of angle ***GUS***

$14z + z = 180$
$\frac{15z}{15} = \frac{180}{15}$
$z = 12$

Final Answers

7. $m \angle FAB$:= 33°
8. Complementary
9. $m \angle ZYG$= 27.5°
10. $m \angle GYX$= 62.5°
11. $m \angle GOA$= 117°
12. Supplementary
13. $m \angle SUM$= 12°
14. $m \angle GUS$ 168°

Railroad tracks connecting cities A, B, and C form a triangle. Angle A measures 44° and Angle B measures 80.25°. Find the measurement of angle C and identify the triangle as Obtuse, Acute, or Right.

15. Find the measure of angle C.

$80.25 + 44 + x = 180$

$124.25 + x = 180.00$

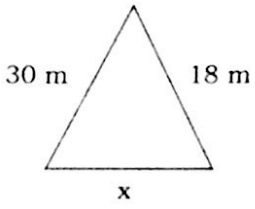
$-124.25 \quad -124.25$

$x = 55.75°$

16. Classify the triangle according to its angles.

The sum of the lengths of the sides of this triangle is 52 m. Find the length of the missing side and classify the triangle as Equilateral, Scalene, or Isosceles.

17. Find the length of the missing side.



18. Classify the triangle according to its sides.

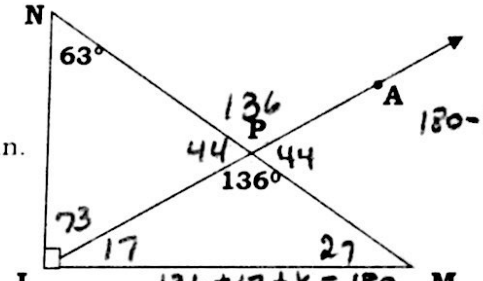
(17) $52 = x + 30 + 18$

$52 = x + 48$

$-48 \quad -48$

$4 = x$

19-25. Use the diagram to find the missing angle measures As listed in the answer column.



$180 - 136 = 44$

$90 - 73 = 17$

$180 = 63 + 44 + x$

$180 = 107 + x$

$-107 \quad -107$

$73 = x$

$136 + 17 + x = 180$

$153 + x = 180$

$-153 \quad -153$

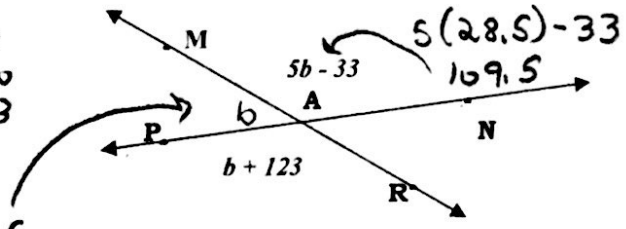
$x = 27$

Final Answers

15. *m* of angle C: 55.75°
16. acute
17. *x* = : 4m
18. Scalene
19. $m\angle APN$ = 136°
20. $m\angle NPL$ = 44°
21. $m\angle NLP$ = 73°
22. $m\angle PLM$ = 17°
23. $m\angle LMP$ = 27°
24. $m\angle APM$ = 44°
25. $m\angle NLM$ = 90°
26. 109.5°
27. 28.5°
28. _____
29. _____

26. Find $m\angle MAN$.

27. Find $m\angle MAP$.



$b + b + 123 = 180$

$2b + 123 = 180$

$-123 \quad -123$

$\frac{2b}{2} = \frac{57}{2}$

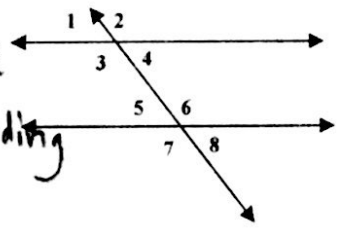
$b = 28.5$

$5(28.5) - 33$

109.5

28. Using the figure, describe the relationship between ∠6 and ∠7 Vertical

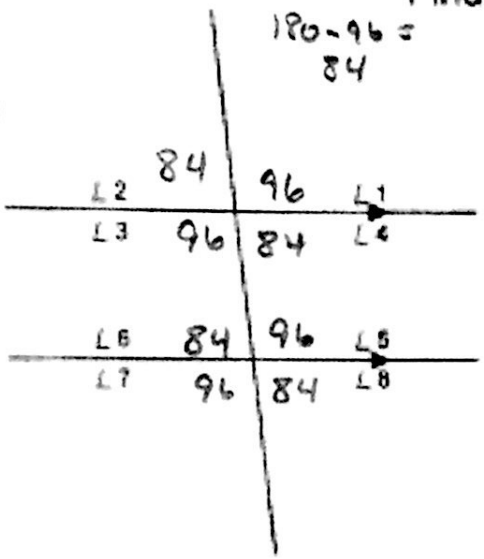
29 Using the figure, describe the relationship between ∠1 and ∠5 Corresponding



Find all of the missing angles.

1)

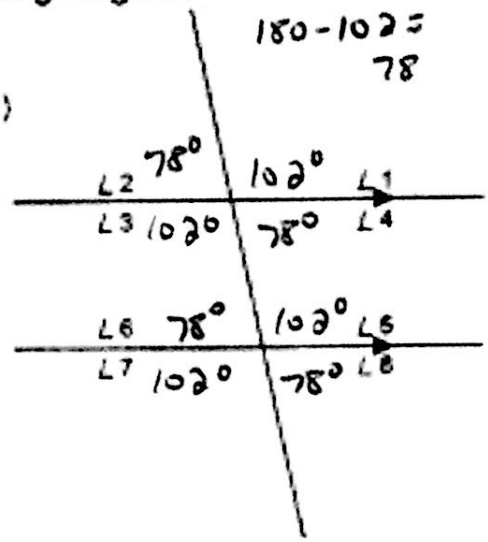
180-96 = 84



∠1 = 96°
∠2 = 84°
∠3 = 96°
∠4 = 84°
∠5 = 96°
∠6 = 84°
∠7 = 96°
∠8 = 84°

2)

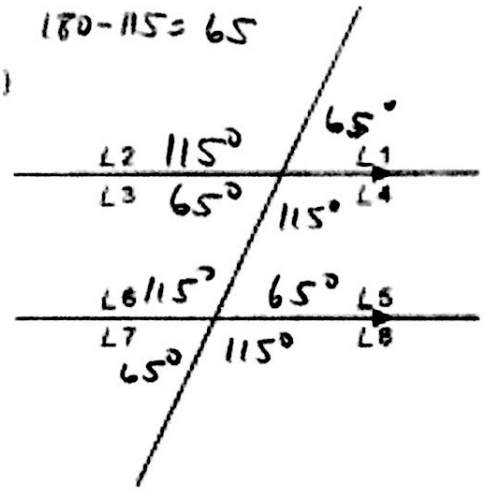
180-102 = 78



∠1 = 102°
∠2 = 78°
∠3 = 102°
∠4 = 78°
∠5 = 102°
∠6 = 78°
∠7 = 102°
∠8 = 78°

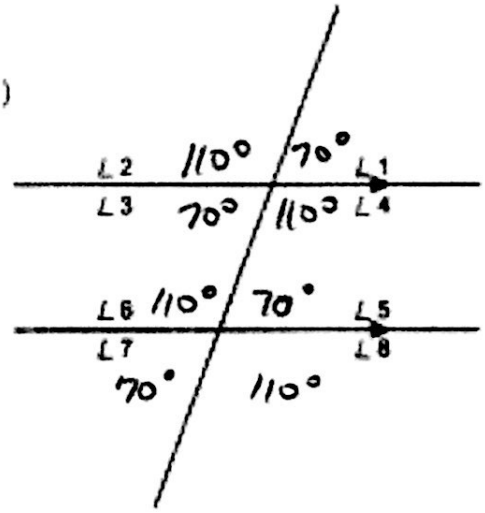
3)

180-115 = 65



∠1 = 65°
∠2 = 115°
∠3 = 65°
∠4 = 115°
∠5 = 65°
∠6 = 115°
∠7 = 65°
∠8 = 115°

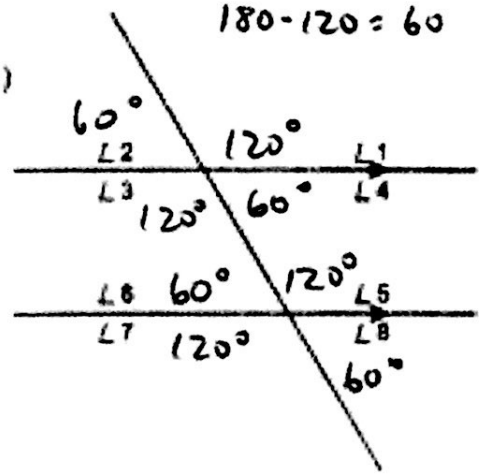
4)



∠1 = 70°
∠2 = 110°
∠3 = 70°
∠4 = 110°
∠5 = 70°
∠6 = 110°
∠7 = 70°
∠8 = 110°

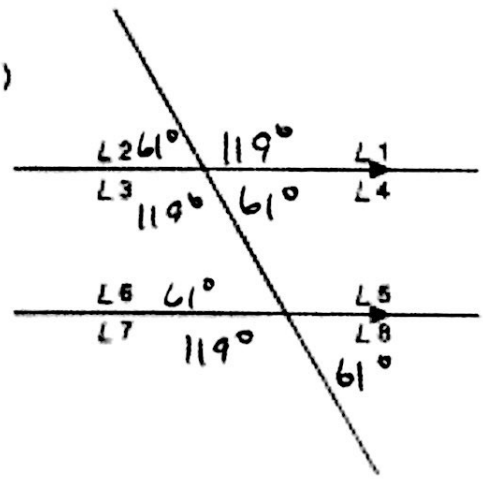
5)

180-120 = 60



∠1 = 120°
∠2 = 60°
∠3 = 120°
∠4 = 60°
∠5 = 120°
∠6 = 60°
∠7 = 120°
∠8 = 60°

6)



∠1 = 119°
∠2 = 61°
∠3 = 119°
∠4 = 61°
∠5 = 119°
∠6 = 61°
∠7 = 119°
∠8 = 61°

not #4 ← 7/7+

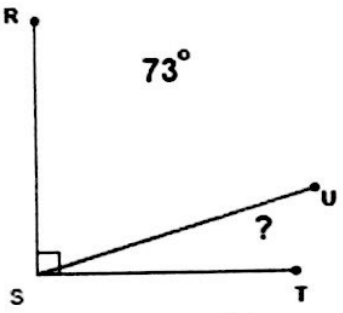
Review – Geometric Properties

Name: Key

Date:_____ Period:_____

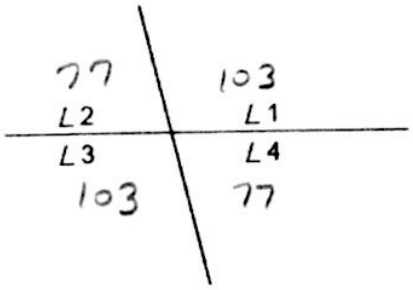
Find the missing angle(s).

1.



Angle = 17

2.



∠1 = 103°

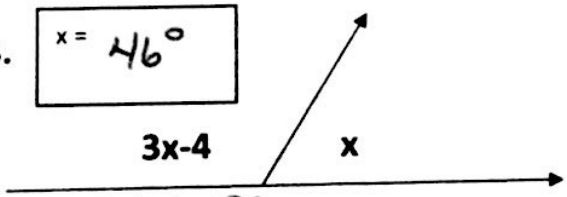
∠2 = 77°

∠3 = 103°

∠4 = 77°

3.

x = 46°



$3x-4+x=180$

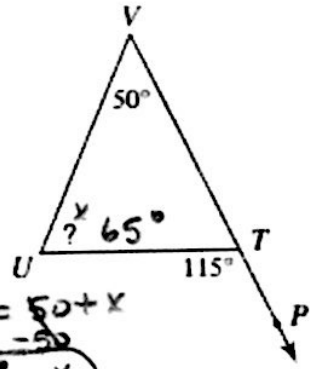
$4x-4=180$

$+4 \quad +4$

$\frac{4x}{4}=\frac{184}{4}$

$x=46°$

4.



$115=50+x$

$-50 \quad -50$

$65°=x$

a) Missing angle measure:

65°

b) Name the triangle (based on the angles):

Acute

5. Two angles are supplementary. The larger angle exceeds twice the smaller angle by 30°. Find the angles.

x

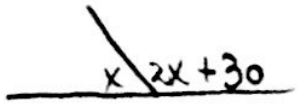
Smaller Angle: 50°

$2x+30$

Larger Angle: 130°

$2(50)+30=$

$100+30=130$



$x+2x+30=180$

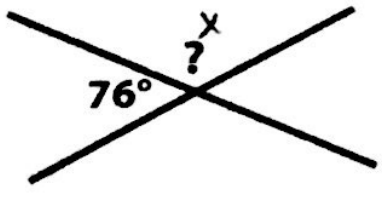
$x+80=180$

$-30 \quad -30$

$\frac{3x}{3}=\frac{150}{3}$

$x=50°$

6.

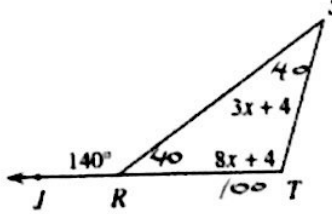


Solve for x.

x = 104°

$180-76=104$

7.



$3x+4+8x+4=140$

$11x+8=140$

$-8 \quad -8$

$\frac{11x}{11}=\frac{132}{11}$

$x=12$

$3(12)+4$

$36+4$

$40°$

a) Measure of angle S = 40°

b) Name the triangle (by angles):

Obtuse