Geometry: Unit 6 Review Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Use the figure at the right to answer the questions below.**
   1. Name the ***alternate interior angles for L3 and L4***  **3 4 L3**

**1 2 7 8**

* + 1. using L1 as a transversal  **5 6**

**9 10**

* + 1. using L2 as a transversal  **13 14 11 12 L4**

**15 16**

**L1**

* 1. Name the ***corresponding angles*** **L2**
     1. for L1 and L2 using L3 as a transversal
     2. for L3 and L4 using L2 as a transversal
  2. Name the ***same-side interior angles***
     1. for L1 and L2 using L3 as a transversal
     2. for L1 and L2 using L4 as a transversal
  3. Name all pairs of ***vertical angles***
  4. In #s 1-4 above, which pairs of angles are congruent?
  5. If ∠1 ≅ ∠9, which pair of lines are parallel? Why?
  6. If ∠6 ≅ ∠3, which pair of lines are parallel? Why?
  7. If ∠5 ≅ ∠4, which pair of lines are parallel? Why?

# True or False

* 1. Alternate interior angles are always congruent. \_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Corresponding angles are congruent. \_\_\_\_\_\_\_\_\_\_\_\_\_
  3. If 2 lines are parallel, then same-side interior angles are congruent. \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **L1 ⎢⎢ L2 and L3 ⎢⎢ L4; m∠2 = 72. Find the measures of all the other angles.**

**L4**

**L3**

**9**

**6**

**3**

**1**

**L1**

**19**

**17**

**12**

**4**

**15**

**8**

**5**

**L2**

**2**

**18**

**16**

**13**

**11**

1. **Use the above figure to find the value of *x* and the measure of each angle.**
   1. m∠1 = 3*x* – 10 2. m∠2 = *x* + 27 3. m∠3 = 910 – 3*x*

m∠5 = *x* + 70 m∠4 = 2*x* – 36 m∠5 = *x* – 90

* 1. m∠16 = 8*x* – 80 5. m∠12 = *x* + 72

m∠15 = -2*x* + 116 m∠3 = -16*x* + 171

# Proofs

**3 6 2 L1**

* 1. **7**  **5** **Given:** L1 // L2

L3 // L4

**1 4** **L2** **Prove:** ∠ 1 ≅ ∠3

**8**

**L3 L4**

* 1. **6 1** **Given:** ∠ 1 ≅ ∠ 4

**K**  **3** **F** **Prove:** FK // HG

**2**

**G 4 5 H**

**t**

3.  **1**  **L** **Given:** L // M

**2** ∠1 ≅ ∠4  
 **4** **Show:** ∠3 ≅ ∠4

**3 M**

**t**

**t**

4.  **1**  **L1** **Given:** L1 // L2

L2 // L3

**Show:** ∠ 1 ≅ ∠4

**2**

**3 L2**

**4 L3**

A

B

C

D

E

5. . Given: AC = BC and 

Prove: 

**Part VI: Parallelograms**

A B

1. given ABCD with AE= 2x + 9,

E BE= y + 12, CE= 19, DE= 20

Find x and y. What property?

D C

1. Use picture in #1. AB= 6x + 40, DC= x- 120. Find x
2. Use picture in #1. AB= 2x + 3y, BC= 3x + 2y, DC=26, AD=24. Find x and y
3. CAD= 3x + 12, M ACB= 5x – 12. Find x

5. AB= 3x + 5 DC= 5x-20

a) Find x b) What properties of parallelograms did you use?

6. AE= 3x + y EC= 12 DE= 2x – 3y BE=21

a) Find x & y b) What properties of parallelograms did you use? 

1. J Given: EFIH, EGJH

H I Prove: JIFG is

G

E F

B A Given: ABCD; ; 

H Prove: 

G

C D