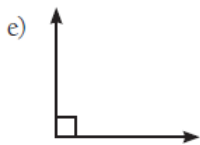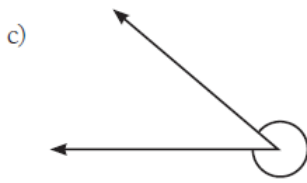**GMF 10**   **Angles and Parallel lines Review**
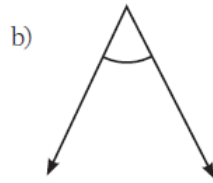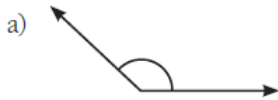
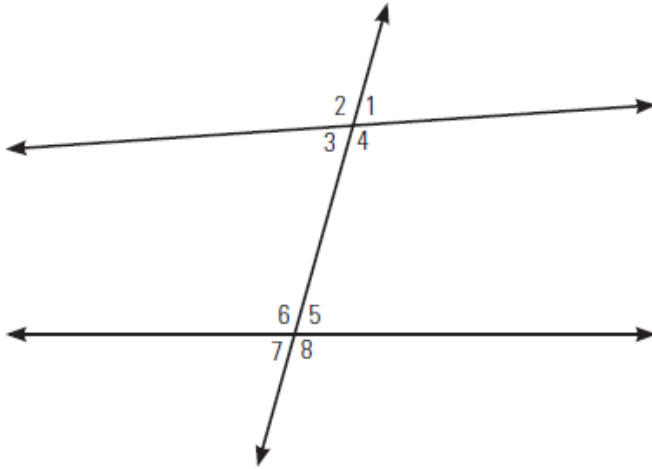1. Classify each of the following as acute, right, obtuse, straight, or reflex angles.

a)

b)

c)

d)

e)

f)

2. Fill in the missing parts in the table. If no such angle exists, explain why.

ANGLE CALCULATIONS			
Angle	Complement	Supplement	Resulting angle measure after the angle is bisected
58°			
			47°
		93°	
153°			
	25°		

3. Name the relationship between the indicated pairs of angles.

a) ∠3 and ∠5

b) ∠4 and ∠5

c) ∠1 and ∠3

d) ∠2 and ∠6

4. In the diagram below, ℓ₁ is parallel to ℓ₂. Determine the measures of the indicated angles and explain your reasons. Write the answers in the order that you calculated them.
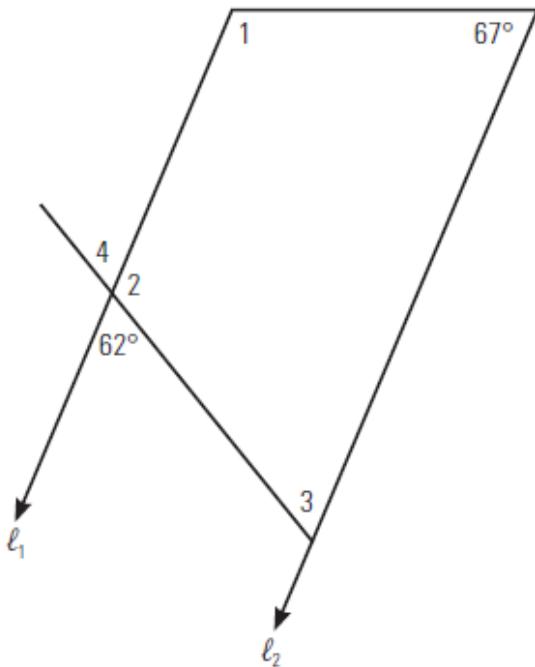
5. Given the following diagram, what must be the measures of ∠1 and ∠2 if BE is parallel to CD? State your reasons.
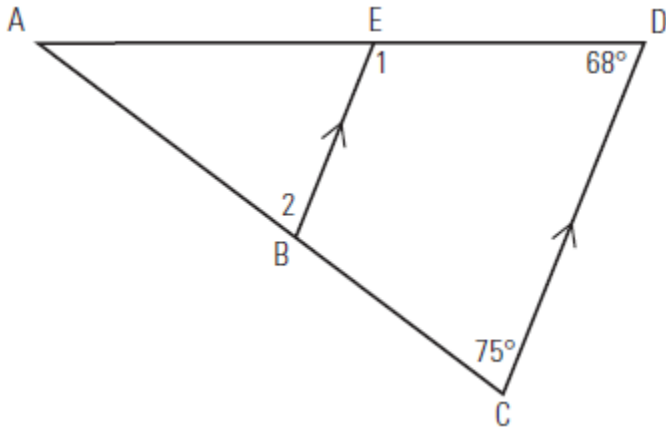
6. In trapezoid PQRS, PS is parallel to QR. What are the measures of ∠1 and ∠2?
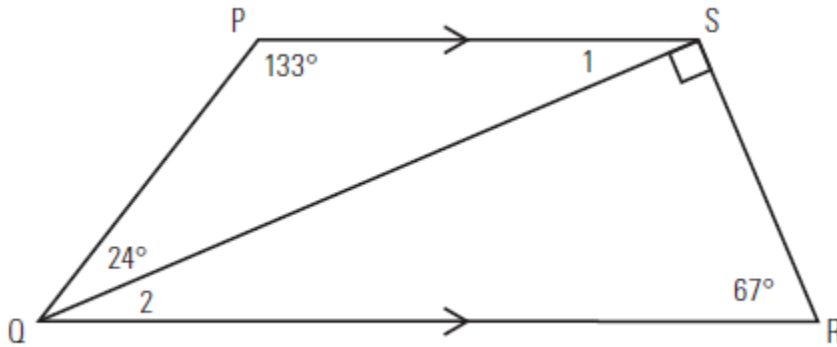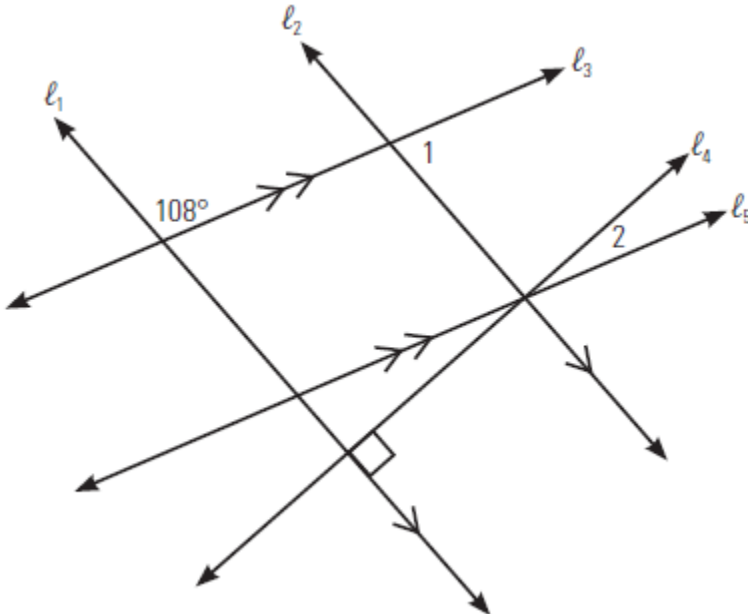

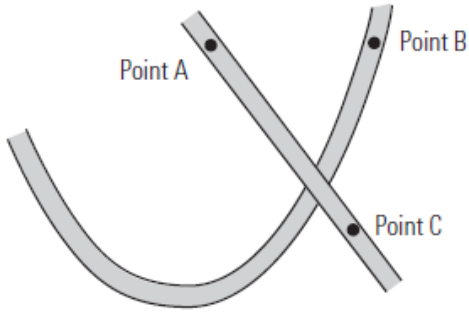7. If ℓ_1 is parallel to ℓ_2, and ℓ_3 is parallel to ℓ_5, what are the following angle measures?

a) the value of ∠1
b) the value of ∠2 that will make ℓ_4 perpendicular to ℓ_2

8. On the map below, what is the true bearing from the following points?

Point B
Point A
Point C

a) A to B

b) B to C

9. Fred states that if ℓ_1 is parallel to ℓ_2, and ℓ_2 is parallel to ℓ_3, then it follows that ℓ_1 is parallel to ℓ_3. Is Fred right? Show your answer using a diagram.

10. In the diagram below, ℓ_1 is parallel to ℓ_2, and ℓ_2 is parallel to ℓ_3. State two angles whose measures are the same as $\angle 7$. Explain your reasoning.

ℓ_3
ℓ_2
ℓ_1
1
2 3
4
t_1
7
6 5
11
10
9
8
t_2
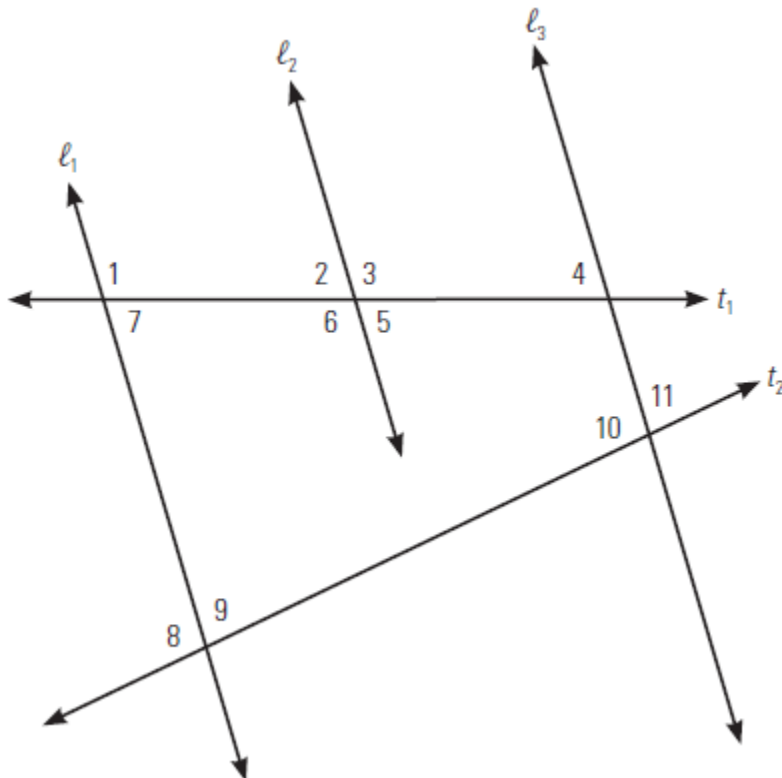
Angles and Parallel line Review Solutions

1. a) obtuse b) acute c) reflex d) straight e) right f) obtuse

2.

ANGLE CALCULATIONS			
Angle	Complement	Supplement	Resulting angle measures after angle is bisected
58°	32°	122°	29°
94°	Does not exist, because angle is greater than 90°.	86°	47°
87°	Does not exist, because angle is greater than 90°.	93°	43.5°
153°	Does not exist, because angle is greater than 90°.	27°	76.5°
65°	25°	115°	32.5°

3. a) alternate interior angles   b) interior angles on the same side of the transversal
c) vertically opposite angles d) corresponding angles

4. ∠2 is supplementary to the 62° angle. ∠2 = 118°
∠4 is vertically opposite to the 62° angle or supplementary to ∠2. <4 = 62°
∠3 is the alternate interior angle to the 62° angle, and is an interior angle on the same side of the transversal as ∠2. ∠3 = 62°
∠1 is an interior angle on the same side of the transversal to the 67° angle. ∠1 = 113°

5. ∠1 is an interior angle on the same side of the transversal (line A) as ∠D (68°).
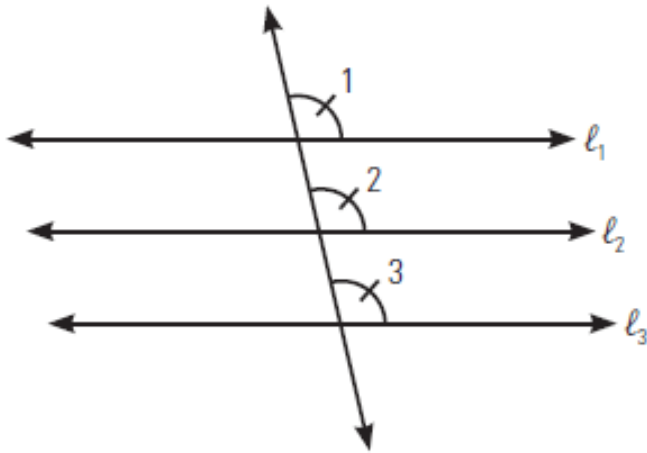∠1 = 112° ∠2 is the corresponding angle to ∠C (75°), given transversal AC. ∠2 = 75°

6. ∠1 = 23°   < 2 = 23°

7. a) ∠1 = 72°   b) ∠2 = 18°

8. a) 90°   b) 185°

9.

Fred is correct. 1 is equal to 3 and ℓ_1 is parallel to ℓ_3 since the corresponding angles are equal.

10. $\angle 2 = \angle 7$

Using ℓ_1 and ℓ_2, and transversal t_1, $\angle 2$ and $\angle 7$ are alternate interior angles.

$\angle 5 = \angle 7$

Using ℓ_1 and ℓ_2, and transversal t_1, $\angle 5$ and $\angle 7$ are corresponding angles.

$\angle 4 = \angle 7$

Using ℓ_1 and ℓ_3, and transversal t_1, $\angle 4$ and $\angle 7$ are alternate interior angles