

### G.G.22: Locus: Solve problems using compound loci

- 1 Towns  $A$  and  $B$  are 16 miles apart. How many points are 10 miles from town  $A$  and 12 miles from town  $B$ ?

1) 1  
2) 2  
3) 3  
4) 0

- 2 The distance between parallel lines  $\ell$  and  $m$  is 12 units. Point  $A$  is on line  $\ell$ . How many points are equidistant from lines  $\ell$  and  $m$  and 8 units from point  $A$ .

1) 1  
2) 2  
3) 3  
4) 4

- 3 What is the total number of points equidistant from two intersecting straight roads and also 300 feet from the traffic light at the center of the intersection?

1) 1  
2) 2  
3) 3  
4) 4

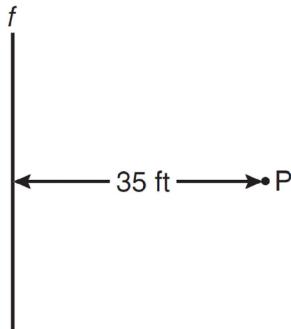
- 4 How many points are equidistant from two parallel lines and also equidistant from two points on one of the lines?

1) 1  
2) 2  
3) 3  
4) 4

- 5 The distance between points  $P$  and  $Q$  is eight (8) units. How many points are equidistant from  $P$  and  $Q$  and also three (3) units from  $P$ ?

1) 1  
2) 2  
3) 0  
4) 4

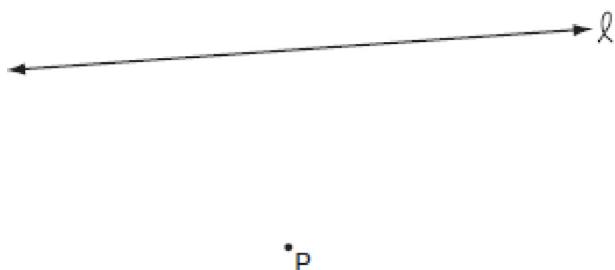
- 6 A man wants to place a new bird bath in his yard so that it is 30 feet from a fence,  $f$ , and also 10 feet from a light pole,  $P$ . As shown in the diagram below, the light pole is 35 feet away from the fence.



How many locations are possible for the bird bath?

1) 1  
2) 2  
3) 3  
4) 0

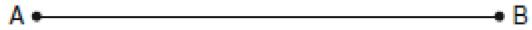
- 7 In the accompanying diagram, point  $P$  lies 3 centimeters from line  $\ell$ .



How many points are both 2 centimeters from line  $\ell$  and 1 centimeter from point  $P$ ?

1) 1  
2) 2  
3) 0  
4) 4

- 8 The length of  $\overline{AB}$  is 3 inches. On the diagram below, sketch the points that are equidistant from  $A$  and  $B$  and sketch the points that are 2 inches from  $A$ . Label with an **X** all points that satisfy both conditions.



- 9 In the diagram below, car  $A$  is parked 7 miles from car  $B$ . Sketch the points that are 4 miles from car  $A$  and sketch the points that are 4 miles from car  $B$ . Label with an **X** all points that satisfy both conditions.



- 10 In the diagram below, town  $C$  lies on straight road  $p$ . Sketch the points that are 6 miles from town  $C$ . Then sketch the points that are 3 miles from road  $p$ . How many points satisfy both conditions?

