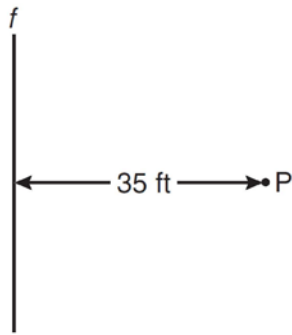


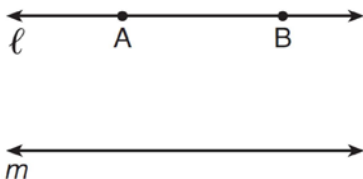
**G.G.22: Locus 1: Solve problems using compound loci**

- 1 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
- 2 Points  $A$  and  $B$  are on line  $\ell$ , and line  $\ell$  is parallel to line  $m$ , as shown in the diagram below.

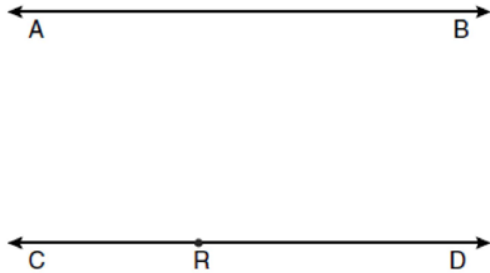


How many points are in the same plane as  $\ell$  and  $m$  and equidistant from  $\ell$  and  $m$ , and also equidistant from  $A$  and  $B$ ?

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

- 3 How many points are 5 units from a line and also equidistant from two points on the line?
- 1) 1  
2) 2  
3) 3  
4) 0
- 4 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
- 5 In a park, two straight paths intersect. The city wants to install lampposts that are both equidistant from each path and also 15 feet from the intersection of the paths. How many lampposts are needed?
- 1) 1  
2) 2  
3) 3  
4) 4

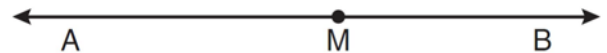
- 6 Two lines,  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CRD}$ , are parallel and 10 inches apart. Sketch the locus of all points that are equidistant from  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CRD}$  and 7 inches from point  $R$ . Label with an **X** each point that satisfies both conditions.



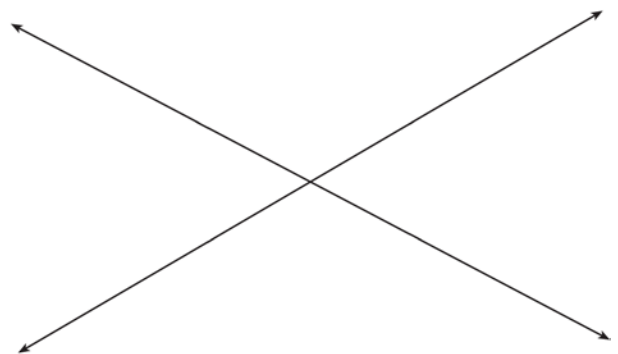
- 7 In the diagram below, car  $A$  is parked 7 miles from car  $B$ . Sketch the points that are 4 miles from car  $A$  and sketch the points that are 4 miles from car  $B$ . Label with an **X** all points that satisfy both conditions.



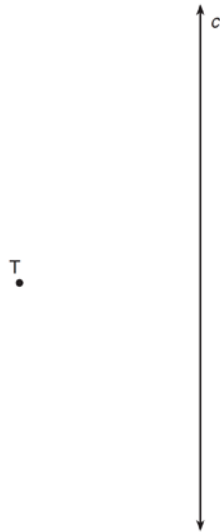
- 8 In the diagram below, point  $M$  is located on  $\overleftrightarrow{AB}$ . Sketch the locus of points that are 1 unit from  $\overleftrightarrow{AB}$  and the locus of points 2 units from point  $M$ . Label with an **X** all points that satisfy both conditions.



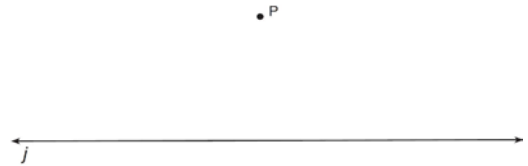
- 9 Two intersecting lines are shown in the diagram below. Sketch the locus of points that are equidistant from the two lines. Sketch the locus of points that are a given distance,  $d$ , from the point of intersection of the given lines. State the number of points that satisfy both conditions.



- 10 A tree,  $T$ , is 6 meters from a row of corn,  $c$ , as represented in the diagram below. A farmer wants to place a scarecrow 2 meters from the row of corn and also 5 meters from the tree. Sketch both loci. Indicate, with an **X**, all possible locations for the scarecrow.



- 11 Point  $P$  is 5 units from line  $j$ . Sketch the locus of points that are 3 units from line  $j$  and also sketch the locus of points that are 8 units from  $P$ . Label with an **X** all points that satisfy *both* conditions.

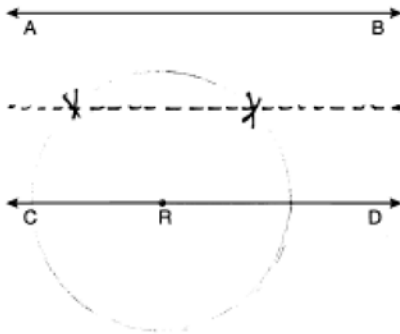


- 12 The length of  $\overline{AB}$  is 3 inches. On the diagram below, sketch the points that are equidistant from  $A$  and  $B$  and sketch the points that are 2 inches from  $A$ . Label with an **X** all points that satisfy both conditions.



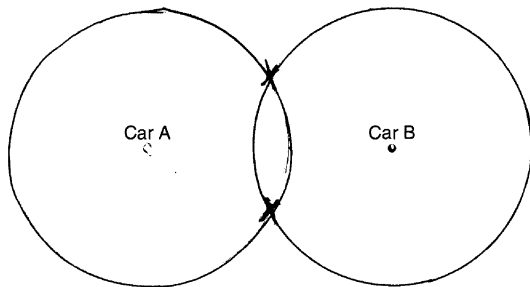
**G.G.22: Locus 1: Solve problems using compound loci****Answer Section**

- 1 ANS: 2 REF: 061121ge  
 2 ANS: 1 REF: 081522ge  
 3 ANS: 2 REF: 011317ge  
 4 ANS: 2 REF: 011011ge  
 5 ANS: 4 REF: 061303ge  
 6 ANS:



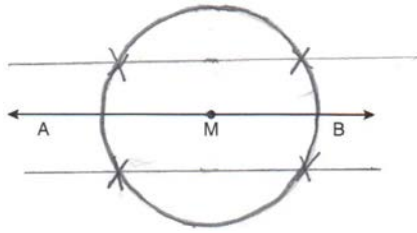
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- 7 ANS:



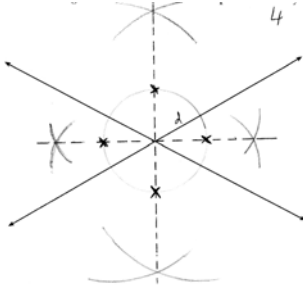
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8 ANS:



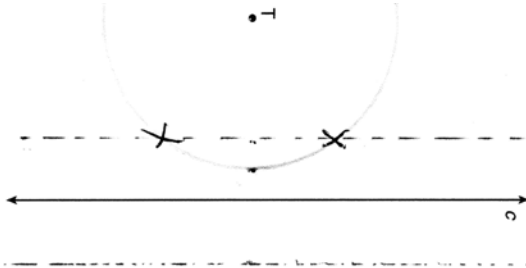
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9 ANS:



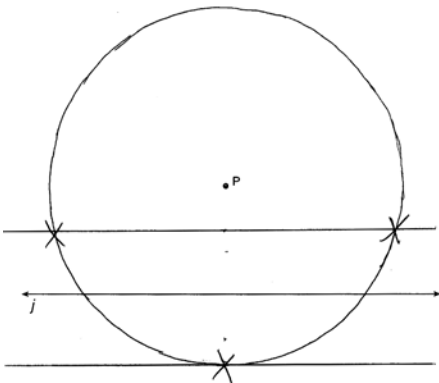
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10 ANS:



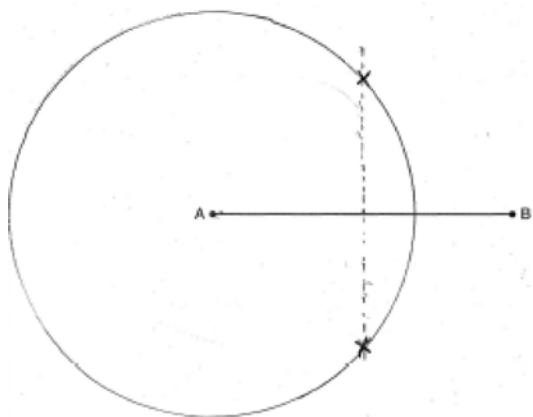
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11 ANS:



REF: 061537ge

12 ANS:



REF: 060932ge