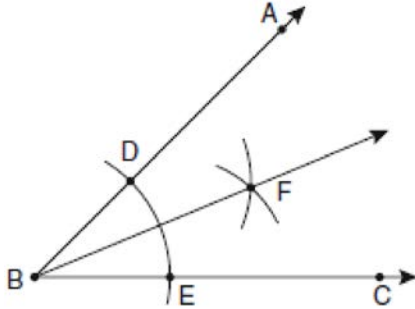


G.CO.D.12: Constructions 1

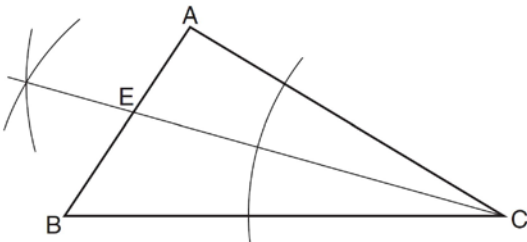
- 1 The diagram below shows the construction of the bisector of $\angle ABC$.



Which statement is *not* true?

- 1) $m\angle EBF = \frac{1}{2} m\angle ABC$
- 2) $m\angle DBF = \frac{1}{2} m\angle ABC$
- 3) $m\angle EBF = m\angle ABC$
- 4) $m\angle DBF = m\angle EBF$

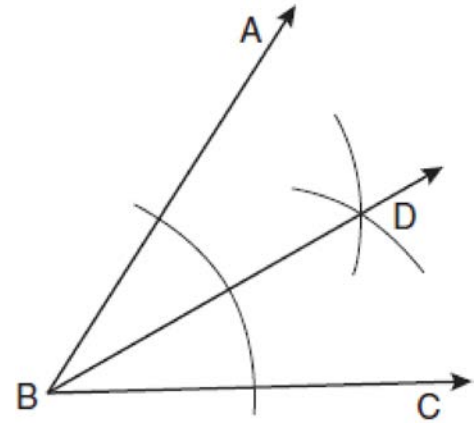
- 2 A student used a compass and a straightedge to construct \overline{CE} in $\triangle ABC$ as shown below.



Which statement must always be true for this construction?

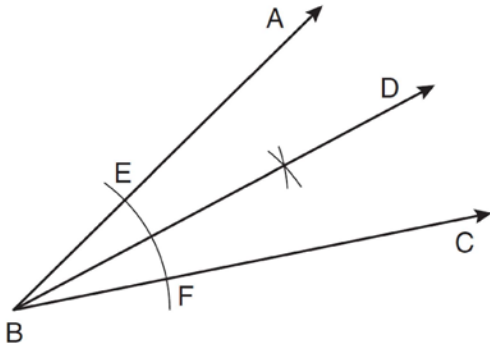
- 1) $\angle CEA \cong \angle CEB$
- 2) $\angle ACE \cong \angle BCE$
- 3) $\overline{AE} \cong \overline{BE}$
- 4) $\overline{EC} \cong \overline{AC}$

- 3 Based on the construction below, which statement must be true?



- 1) $m\angle ABD = \frac{1}{2} m\angle CBD$
- 2) $m\angle ABD = m\angle CBD$
- 3) $m\angle ABD = m\angle ABC$
- 4) $m\angle CBD = \frac{1}{2} m\angle ABD$

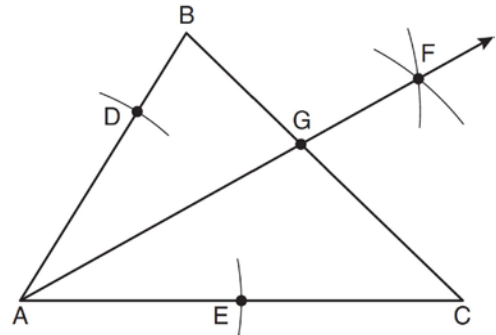
- 4 A straightedge and compass were used to create the construction below. Arc EF was drawn from point B , and arcs with equal radii were drawn from E and F .



Which statement is *false*?

- 1) $m\angle ABD = m\angle DBC$
- 2) $\frac{1}{2}(m\angle ABC) = m\angle ABD$
- 3) $2(m\angle DBC) = m\angle ABC$
- 4) $2(m\angle ABC) = m\angle CBD$

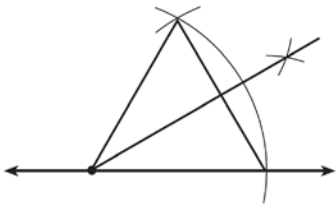
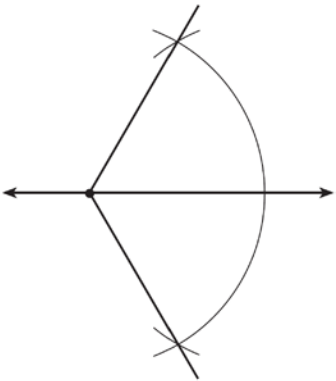
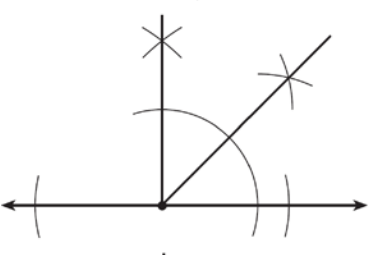
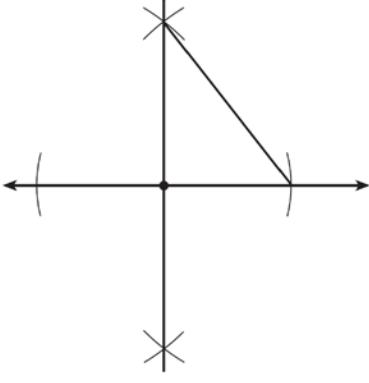
- 5 As shown in the diagram below of $\triangle ABC$, a compass is used to find points D and E , equidistant from point A . Next, the compass is used to find point F , equidistant from points D and E . Finally, a straightedge is used to draw \overrightarrow{AF} . Then, point G , the intersection of \overrightarrow{AF} and side \overline{BC} of $\triangle ABC$, is labeled.





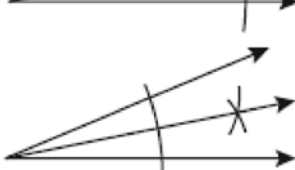
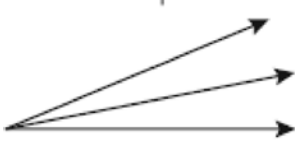
Which statement must be true?

- 1) \overrightarrow{AF} bisects side \overline{BC}
- 2) \overrightarrow{AF} bisects $\angle BAC$
- 3) $\overrightarrow{AF} \perp \overline{BC}$
- 4) $\triangle ABG \sim \triangle ACG$

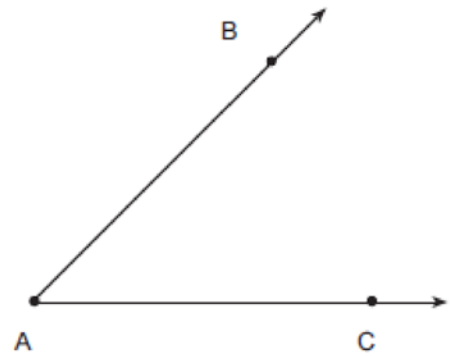
6 Which diagram shows the construction of a 45° angle?

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

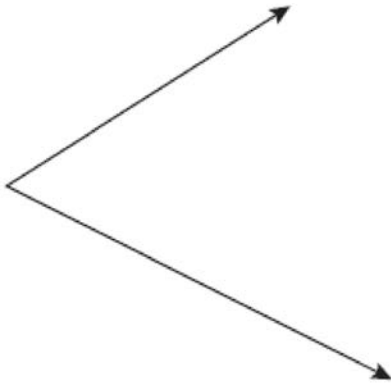
7 Which illustration shows the correct construction of an angle bisector?

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

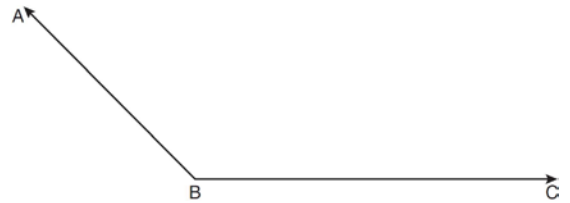
8 Using only a ruler and compass, construct the bisector of angle BAC in the accompanying diagram.



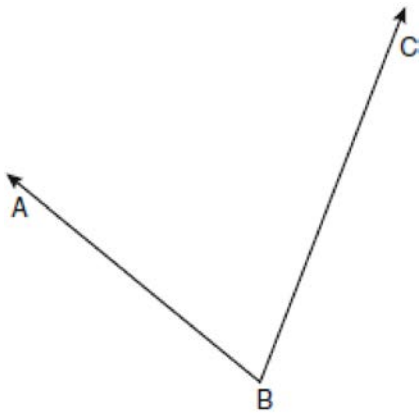
- 9 Using a compass and straightedge, construct the bisector of the angle shown below. [Leave all construction marks.]



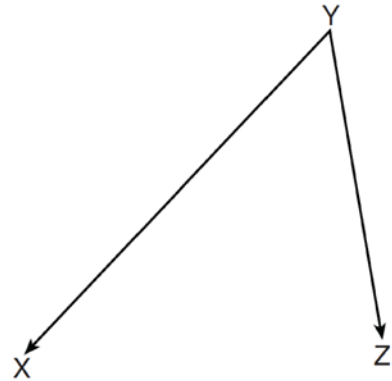
- 11 On the diagram below, use a compass and straightedge to construct the bisector of $\angle ABC$. [Leave all construction marks.]



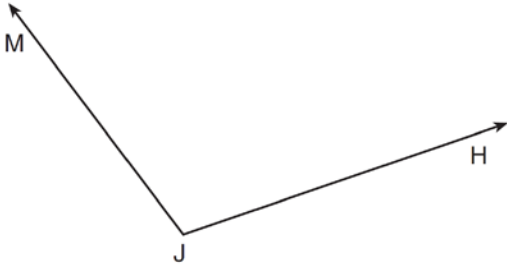
- 10 Using a compass and straightedge, construct the angle bisector of $\angle ABC$ shown below. [Leave all construction marks.]



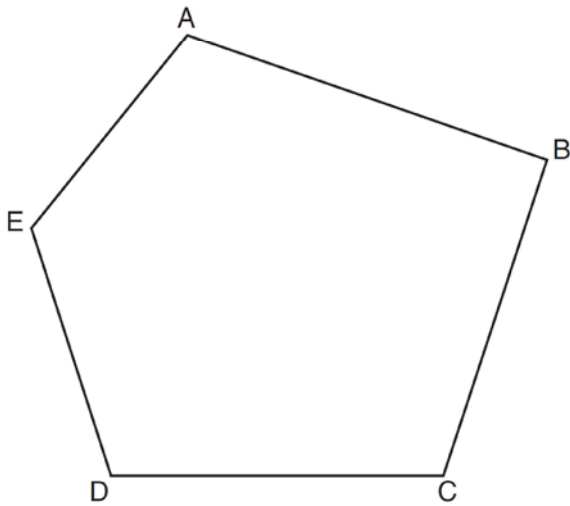
- 12 On the diagram below, use a compass and straightedge to construct the bisector of $\angle XYZ$. [Leave all construction marks.]



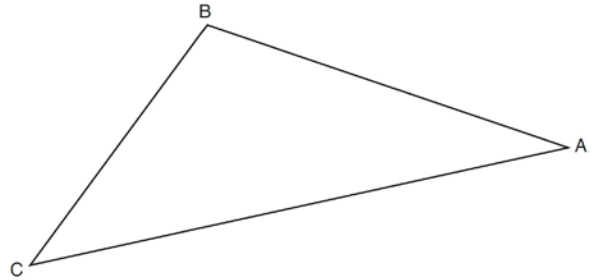
- 13 Using a compass and straightedge, construct the bisector of $\angle MJH$. [Leave all construction marks.]



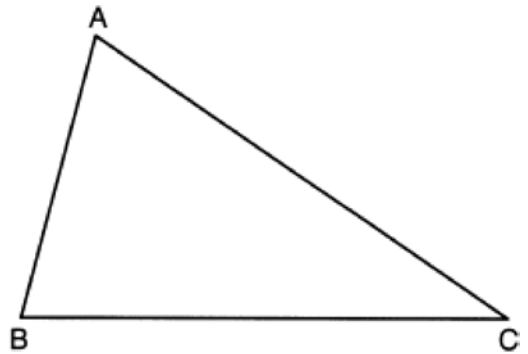
- 14 Using a compass and a straightedge, construct the bisector of $\angle CDE$. [Leave all construction marks.]



- 15 Using a compass and straightedge, construct the bisector of $\angle CBA$. [Leave all construction marks.]



- 16 Using a compass and straightedge, construct the angle bisector of $\angle ABC$. [Leave all construction marks.]

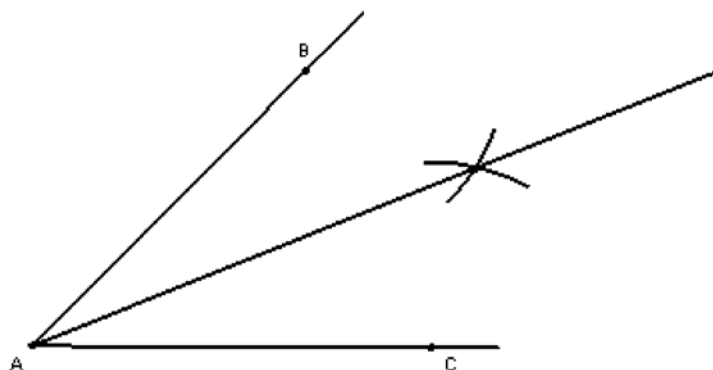


- 17 Using a compass and straightedge, construct an equilateral triangle with \overline{AB} as a side. Using this triangle, construct a 30° angle with its vertex at A . [Leave all construction marks.]



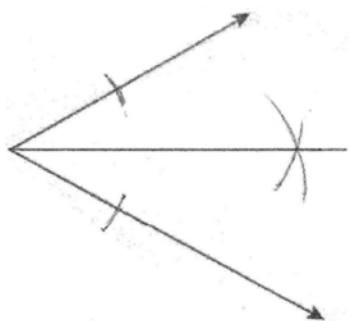
G.CO.D.12: Constructions 1
Answer Section

- 1 ANS: 3 REF: 080902ge
- 2 ANS: 2 REF: 011509ge
- 3 ANS: 2 REF: 011004ge
- 4 ANS: 4 REF: 081106ge
- 5 ANS: 2 REF: 081205ge
- 6 ANS: 3 REF: 011402ge
- 7 ANS: 3 REF: 060925ge
- 8 ANS:



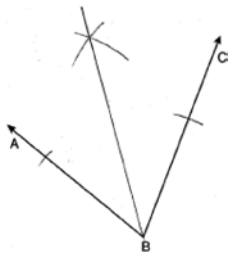
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- 9 ANS:



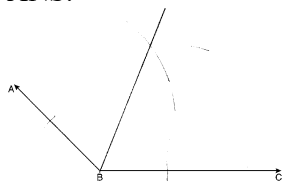
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- 10 ANS:



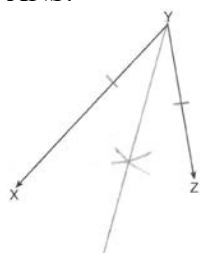
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11 ANS:



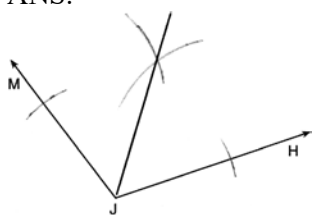
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12 ANS:



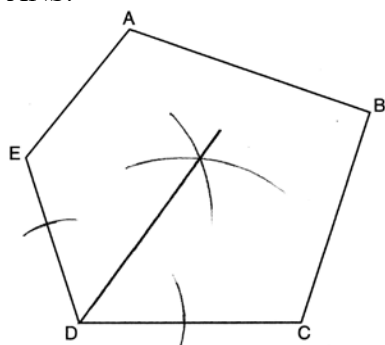
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13 ANS:



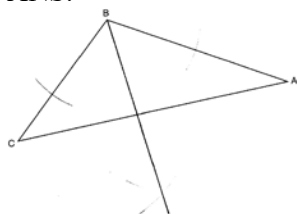
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14 ANS:



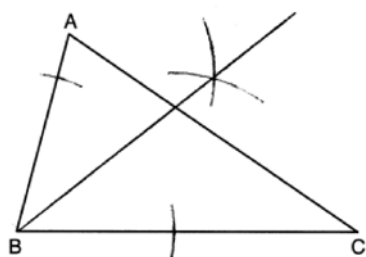
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15 ANS:



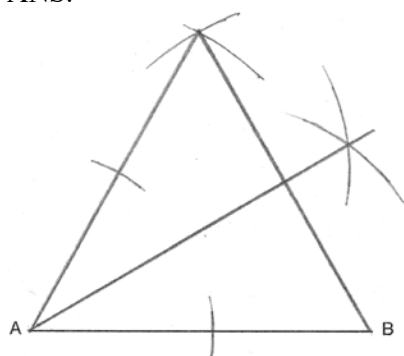
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16 ANS:



REF: 012325geo

17 ANS:



REF: 061437ge