Practice Worksheet 1.5A – Angle Bisectors

Geometry Homework

For # 1-5, \( \overline{EF} \) bisects \( \angle DEG \). (The diagram is not drawn to scale.)

1. If \( m\angle DEG = 88^\circ \), find \( m\angle FEG = \) ________

2. If \( m\angle FED = 27^\circ \), find \( m\angle GED = \) ______

3. If \( m\angle DEF = 3x + 1 \) and \( m\angle DEG = 5x + 19 \), find the value of \( x \).

4. If \( m\angle DEF = 5x - 3 \) and \( m\angle FEG = 2x + 15 \), find the value of \( x \).

5. If \( m\angle FEG = 6x - 7 \) and \( m\angle FED = 2x + 41 \), find the \( m\angle DEG \). (solve for \( x \) first!)
For #6-9, \(BX\) is the BISECTOR of \(\angle ABC\). (Diagrams are not drawn to scale)

6. If \(m\angle ABX = 5x\) and \(m\angle XBC = 3x + 10\), find the \(m\angle ABC\). (Solve for \(x\) first!)

7. If \(m\angle ABC = 4x - 12\) and \(m\angle ABX = 24\), find the value of \(x\).

8. If \(m\angle ABC = 4x + 16\) and \(m\angle CBX = 3x + 6\), find the value of \(x\).

9. If \(m\angle ABC = 5x + 18\) and \(m\angle CBX = 2x + 12\), find the value of \(x\), and the \(m\angle ABC\).