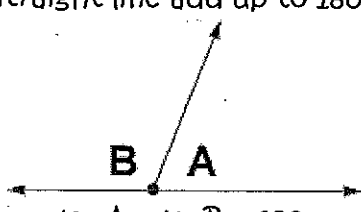
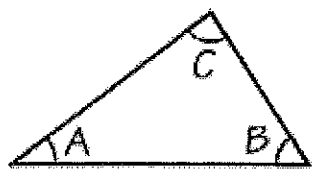
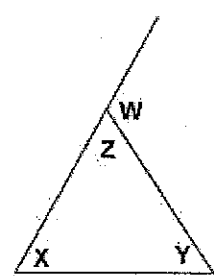
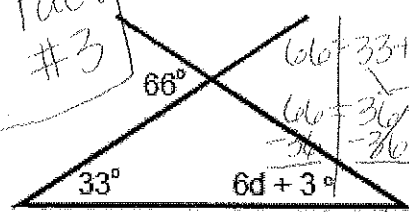


Angle Relationships and Equations

Use the three geometry facts below to set up an equation to solve in each problem.

<p>Fact #1: Two angles that make a straight line add up to 180.</p>  <p style="text-align: center;">$m\angle A + m\angle B = 180$</p>	<p>Fact #2: The three interior angles of a triangle add up to 180.</p>  <p style="text-align: center;">$m\angle A + m\angle B + m\angle C = 180$</p>	<p>Fact #3: The exterior angle of a triangle is equal to the sum of the two remote interior angles.</p>  <p style="text-align: center;">$m\angle X + m\angle Y = m\angle W$</p>
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1. **Fact #3**

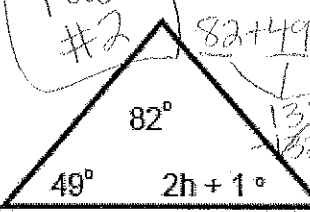


$66 + 33 + 6d + 3 = 180$

$$\begin{array}{r} 66 + 33 + 6d + 3 \\ \underline{- 99} \\ 72 + 6d \\ \underline{- 72} \\ 6d \\ \underline{\div 6} \\ d \end{array}$$

$d = \underline{5}$ $5 = d$

2. **Fact #2**

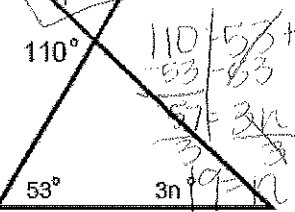


$82 + 49 + 2h + 1 = 180$

$$\begin{array}{r} 82 + 49 + 2h + 1 \\ \underline{- 132} \\ 2h + 20 \\ \underline{- 20} \\ 2h \\ \underline{\div 2} \\ h \end{array}$$

$h = \underline{24}$ $h = 24$

3. **Fact #3**

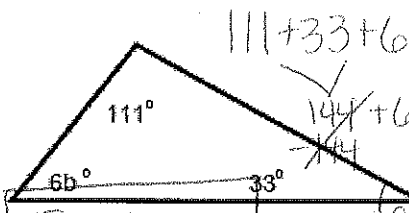


$110 + 53 + 3n + 19 = 180$

$$\begin{array}{r} 110 + 53 + 3n + 19 \\ \underline{- 162} \\ 3n + 62 \\ \underline{- 62} \\ 3n \\ \underline{\div 3} \\ n \end{array}$$

$n = \underline{19}$

4. **Fact #2**

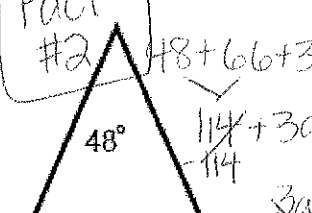


$111 + 33 + 6b = 180$

$$\begin{array}{r} 111 + 33 + 6b \\ \underline{- 144} \\ 6b = 36 \\ \underline{\div 6} \\ b \end{array}$$

$b = \underline{6}$ $b = 6$

5. **Fact #2**

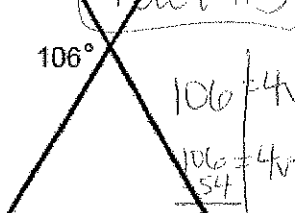


$48 + 66 + 3a = 180$

$$\begin{array}{r} 48 + 66 + 3a \\ \underline{- 114} \\ 3a = 66 \\ \underline{\div 3} \\ a \end{array}$$

$a = \underline{22}$ $a = 22$

6. **Fact #3**

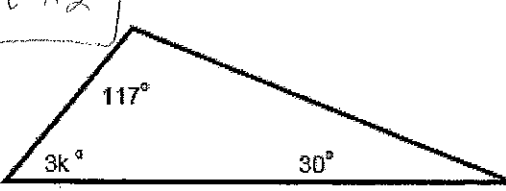


$106 + 52 + 4v + 2 = 180$

$$\begin{array}{r} 106 + 52 + 4v + 2 \\ \underline{- 160} \\ 4v + 58 \\ \underline{- 58} \\ 4v \\ \underline{\div 4} \\ v \end{array}$$

$v = \underline{13}$ $13 = v$

7. **Fact #2**

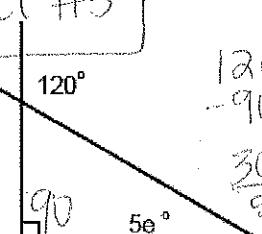


$3k + 117 + 30 = 180$

$$\begin{array}{r} 3k + 117 + 30 \\ \underline{- 147} \\ 3k = 33 \\ \underline{\div 3} \\ k \end{array}$$

$k = \underline{11}$ $k = 11$

8. **Fact #3**



$120 + 90 + 5e = 180$

$$\begin{array}{r} 120 + 90 + 5e \\ \underline{- 210} \\ 5e = -30 \\ \underline{\div 5} \\ e \end{array}$$

$e = \underline{6}$ $6 = e$