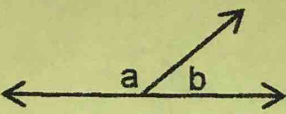
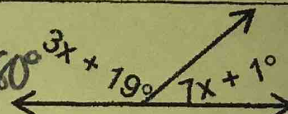
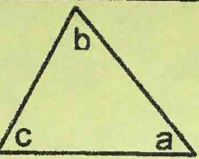
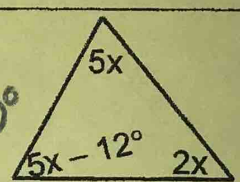
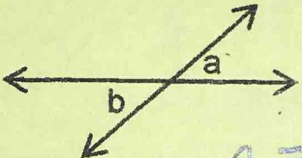
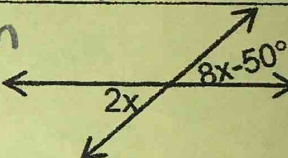
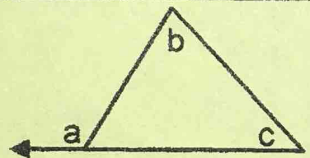
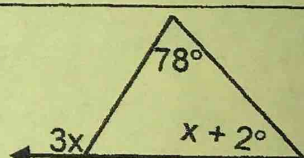
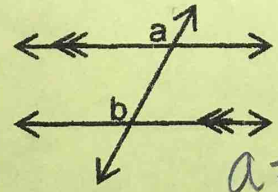
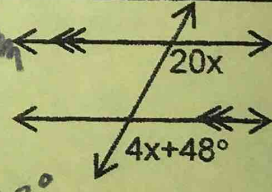
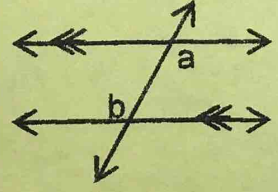
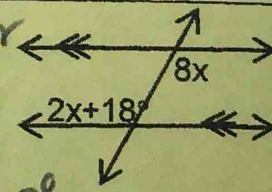
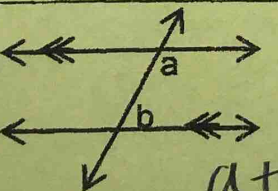


## Angle Justifications

Justification	Diagram/Set Up	Example
<b>Linear Pair</b>	 $a + b = 180^\circ$	<b>Linear Pair</b> $(3x+19) + (7x+1) = 180$ $10x + 20 = 180$ $\quad -20 \quad -20$ $\frac{10x}{10} = \frac{160}{10}$ $x = 16^\circ$ 
<b>Triangle Sum Theorem</b> ( $\Delta$ Sum Thm)	 $a + b + c = 180^\circ$	<b><math>\Delta</math> Sum Thm</b> $5x + 5x - 12 + 2x = 180$ $12x - 12 = 180$ $12x = 192$ $x = 16^\circ$ 
<b>Vertical Angle Theorem</b> (Vertical $\angle$ Thm)	 $a = b$	<b>Vertical <math>\angle</math> Thm</b> $2x = 8x - 50$ $-8x \quad -8x$ $-6x = -50$ $\quad -6 \quad -6$ $x = \frac{25}{3}$ or $8\frac{1}{3}$ 
<b>Exterior Angle Theorem</b> (Exterior $\angle$ Thm)	 $a = b + c$	<b>Exterior <math>\angle</math> Thm</b> $3x = 78^\circ + x + 2$ $3x = x + 80$ $-x \quad -x$ $2x = 80$ $x = 40^\circ$ 
<b>Corresponding Angle Theorem</b> (Corresponding $\angle$ Thm)	 $a = b$	<b>Corresponding <math>\angle</math> Thm</b> $20x = 4x + 48$ $-4x \quad -4x$ $\frac{16x}{16} = \frac{48}{16}$ $x = 3^\circ$ 
<b>Alternate Interior Angle Theorem</b> (Alternate Interior $\angle$ Thm)	 $a = b$	<b>Alternate Interior <math>\angle</math> Thm</b> $2x + 18 = 8x$ $-2x \quad -2x$ $\frac{18}{6} = \frac{6x}{6}$ $x = 3^\circ$ 
<b>Same Side Interior Angle Theorem</b> (Same Side Interior $\angle$ Thm)	 $a + b = 180^\circ$	<b>Same Side Interior <math>\angle</math> Thm</b> $2x + 5 + 3x + 15 = 180$ $5x + 20 = 180$ $\frac{5x}{5} = \frac{160}{5}$ $x = 32^\circ$ 