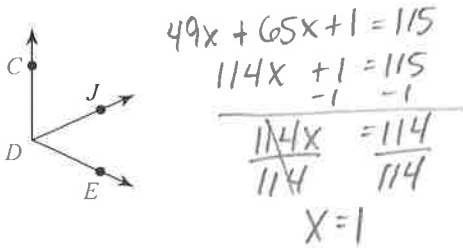


WS - PC Review 1.4 - 1.6

- 1) Find $m\angle CDJ$ if $m\angle JDE = 49x$, $m\angle CDE = 115^\circ$, and $m\angle CDJ = 65x + 1$.

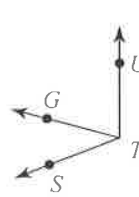


$$49x + 65x + 1 = 115$$

$$\begin{array}{r} 114x + 1 = 115 \\ -1 \quad -1 \\ \hline 114x = 114 \\ \hline x = 1 \end{array}$$

$$m\angle CDJ = 65(1) + 1 = 66^\circ$$

- 2) Find $m\angle STU$ if $m\angle GTU = 75^\circ$, $m\angle STG = 8x - 4$, and $m\angle STU = 21x + 6$.

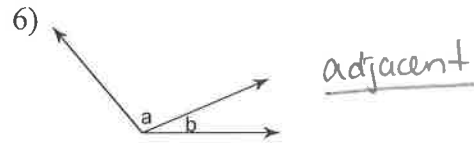
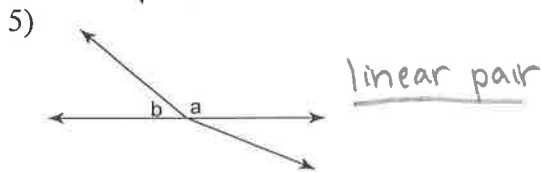
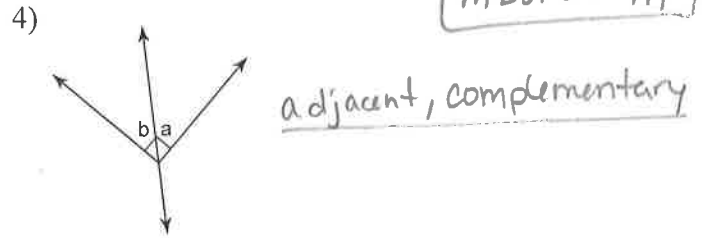
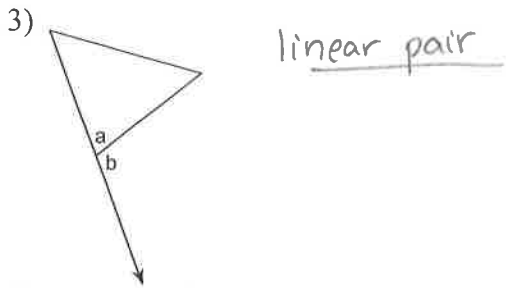


$$75 + 8x - 4 = 21x + 6$$

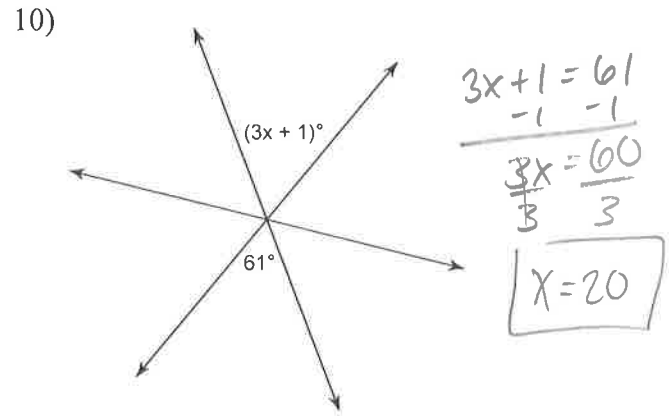
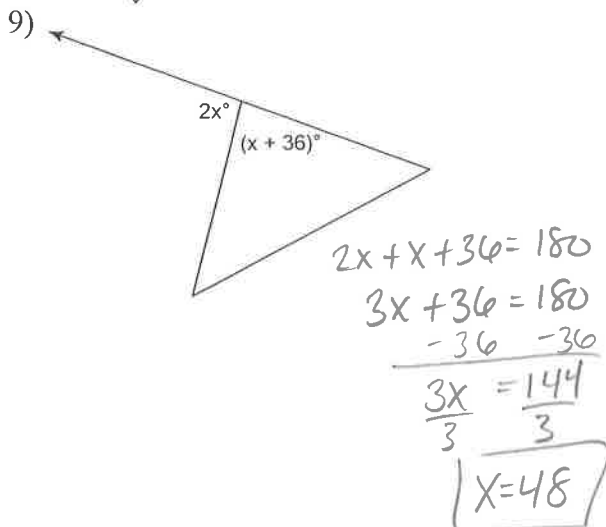
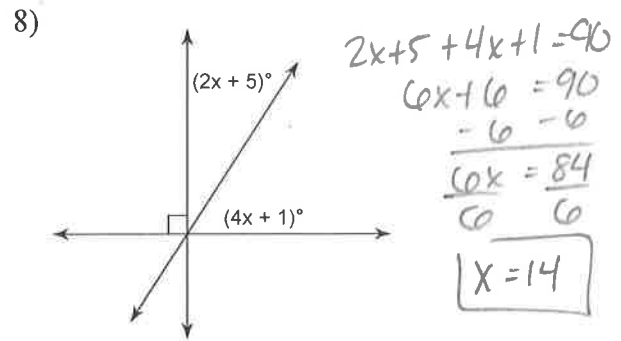
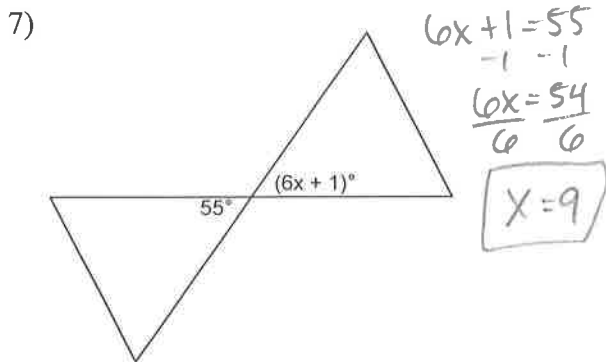
$$\begin{array}{r} 71 + 8x = 21x + 6 \\ -8x \quad -8x \\ \hline -71 = 13x + 6 \\ -6 \quad -6 \\ \hline -65 = 13x \\ \hline \frac{-65}{13} = \frac{13x}{13} \\ -5 = x \end{array}$$

$$m\angle STU = 21(-5) + 6 = -105 + 6 = -99^\circ$$

Name the relationship: complementary, linear pair, vertical, or adjacent.

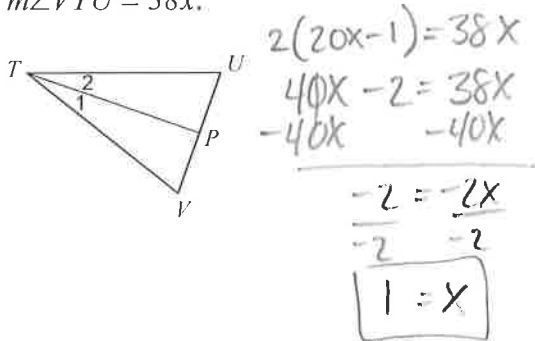


Find the value of x.

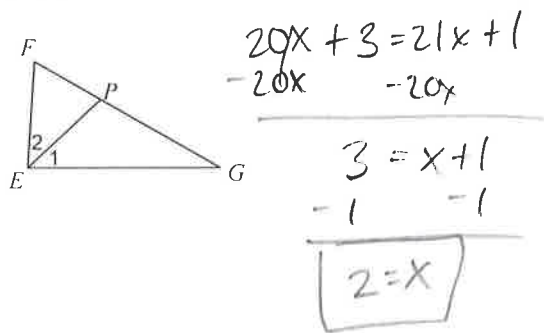


Each figure shows a triangle with one of its angle bisectors.

- 11) Find x if $m\angle 1 = 20x - 1$ and $m\angle VTU = 38x$.



- 12) $m\angle 2 = 21x + 1$ and $m\angle 1 = 20x + 3$. Find x .



- 13) An angle is 8 times the measure of its complement. Find the measure of both angles.

$$\begin{aligned}
 X + 8X &= 90 \\
 9X &= 90 \\
 \frac{9X}{9} &= \frac{90}{9} \\
 X &= 10
 \end{aligned}$$

$$\begin{aligned}
 X &= 10^\circ \\
 8X &= 80^\circ
 \end{aligned}$$

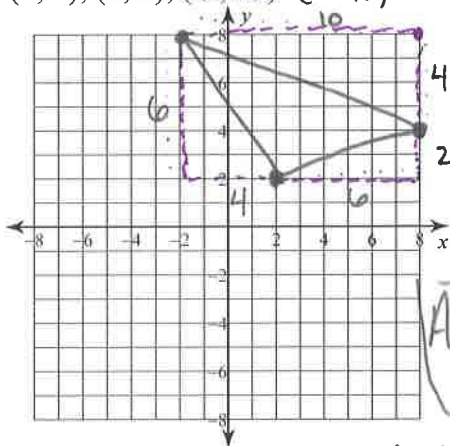
- 14) An angle is 4 times the measure of its supplement. Find the measure of both angles.

$$\begin{aligned}
 X + 4X &= 180 \\
 5X &= 180 \\
 \frac{5X}{5} &= \frac{180}{5} \\
 X &= 36
 \end{aligned}$$

$$\begin{aligned}
 X &= 36^\circ \\
 4X &= 144^\circ
 \end{aligned}$$

The coordinates of a triangle are provided. Find the perimeter and area of each triangle. Leave the perimeter in simplest radical form and round the area to the nearest tenth.

- 15) $(8, 4), (2, 2), (-2, 8)$



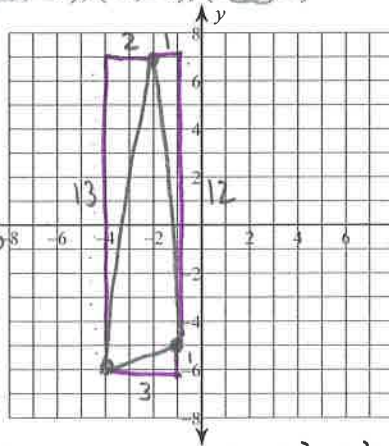
$$\begin{aligned}
 A_{\text{TOTAL}} &= (10)(6) = 60 \\
 A_{\Delta_1} &= \frac{1}{2}(4)(6) = 12 \\
 A_{\Delta_2} &= \frac{1}{2}(2)(6) = 6 \\
 A_{\Delta_3} &= \frac{1}{2}(4)(16) = 32
 \end{aligned}$$

$$A = 60 - (38) = 22 \text{ units}^2$$

$$\begin{aligned}
 4^2 + 6^2 &= c^2 & 10^2 + 4^2 &= c^2 & 2^2 + 6^2 &= c^2 \\
 16 + 36 &= c^2 & 100 + 16 &= c^2 & 4 + 36 &= c^2 \\
 \sqrt{52} &= \sqrt{c^2} & \sqrt{116} &= \sqrt{c^2} & \sqrt{40} &= \sqrt{c^2} \\
 \sqrt{4} \sqrt{13} & & \sqrt{4} \sqrt{29} & & \sqrt{4} \sqrt{10} & \\
 2\sqrt{13} &= c & 2\sqrt{29} &= c & 2\sqrt{10} &= c
 \end{aligned}$$

$$P = 2\sqrt{13} + 2\sqrt{29} + 2\sqrt{10} \text{ units}$$

- 16) $(-2, 10), (-4, 6), (-1, -5)$



$$\begin{aligned}
 A_{\text{TOTAL}} &= 3(13) = 39 \\
 A_{\Delta_1} &= \frac{1}{2}(2)(13) = 13 \\
 A_{\Delta_2} &= \frac{1}{2}(1)(12) = 6 \\
 A_{\Delta_3} &= \frac{1}{2}(1)(8) = 4
 \end{aligned}$$

$$A = 39 - (20.5) = 18.5 \text{ units}^2$$

$$\begin{aligned}
 13^2 + 2^2 &= c^2 & 12 + 3^2 &= c^2 \\
 169 + 4 &= c^2 & 1 + 9 &= c^2 \\
 \sqrt{173} &= \sqrt{c^2} & \sqrt{10} &= \sqrt{c^2} \\
 \sqrt{173} &= c & \sqrt{10} &= c \\
 12 + 12^2 &= c^2 & & \\
 1 + 144 &= c^2 & & \\
 \sqrt{145} &= \sqrt{c^2} & & \\
 \sqrt{15} \sqrt{29} & & & \\
 \sqrt{145} &= c & & \\
 P &= \sqrt{173} + \sqrt{145} + \sqrt{10} \text{ units}
 \end{aligned}$$

$$P = \sqrt{173} + \sqrt{145} + \sqrt{10} \text{ units}$$