

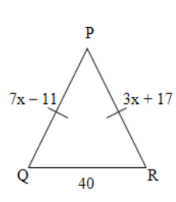
1. Find the perimeter of equilateral triangle JKL if $JL = 3x + 11$, and $KJ = 2x + 30$.

$$\begin{array}{r} 3x+11 = 2x+30 \\ -2x \quad -2x \\ \hline x+11 = 30 \\ -11 \quad -11 \\ \hline x = 19 \end{array}$$

$$\begin{array}{l} 2(19)+30 = KJ \\ 38+30 = KJ \\ \boxed{68 = KJ} \\ P = 3(68) \\ \boxed{P = 204} \end{array}$$

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2. Find x .

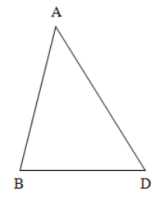


$$\begin{array}{r} 7x-11 = 3x+17 \\ +11 \quad \quad 11 \\ \hline 7x = 3x+28 \\ -3x \quad -3x \\ \hline 4x = 28 \\ \frac{4x}{4} = \frac{28}{4} \\ \boxed{x = 7} \end{array}$$

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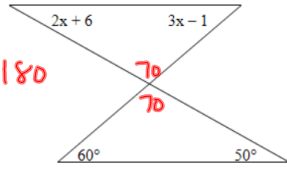
3. Name all the parts (sides and angles) of $\triangle ABD$

$\angle A$ \overline{AB}
 $\angle B$ \overline{BD}
 $\angle D$ \overline{AD}



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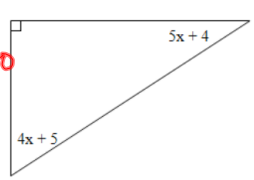
4. Find x .



$$\begin{array}{l} 2x+6+3x-1+70 = 180 \\ 5x+75 = 180 \\ 5x = 105 \\ \boxed{x = 21} \end{array}$$

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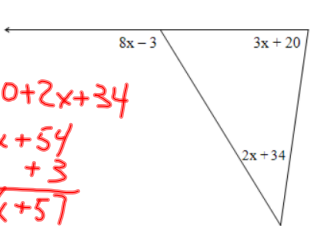
5. Find x .



$$\begin{array}{l} 4x+5+5x+4+90 = 180 \\ 9x+99 = 180 \\ 9x = 81 \\ \boxed{x = 9} \end{array}$$

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6. Find x .



$$\begin{array}{l} 8x-3 = 3x+20+2x+34 \\ 8x-3 = 5x+54 \\ +3 \quad \quad +3 \\ \hline 8x = 5x+57 \\ -5x \quad -5x \\ \hline 3x = 57 \\ \frac{3x}{3} = \frac{57}{3} \\ \boxed{x = 19} \end{array}$$

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7. Write a triangle congruency statement for the following triangles.

$\Delta DAT \cong \Delta ANTA$

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8. Given $\triangle ABC \cong \triangle DEF$, $AB = 15$, $BC = 20$, $AC = 25$
 $DF = 3x - 8$, find x .

$$3x - 8 = 25$$

$$+8 \quad +8$$

$$3x = 33$$

$$\frac{3x}{3} = \frac{33}{3}$$

$x = 11$

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9. Given $\triangle RED$, $m\angle E = 63$, $m\angle R = 66$, $m\angle D = 3x + 9$.
 Find x .

$$63 + 66 + 3x + 9 = 180$$

$$3x + 138 = 180$$

$$-138 \quad -138$$

$$3x = 42$$

$$\frac{3x}{3} = \frac{42}{3}$$

$x = 14$

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10. What additional corresponding parts would have to be \cong for the following triangles to be \cong by the SAS postulate?

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Draw and label triangles XYZ and RQS. Indicate the additional pairs of corresponding parts that would have to be proved \cong in order to use the given postulate or theorem to prove the triangles \cong .

11. $\angle X \cong \angle R$, $\overline{XY} \cong \overline{RQ}$, by AAS

12. $\overline{YZ} \cong \overline{RS}$, $\angle Z \cong \angle S$, by SAS

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13. Which parts of the following triangle must be \cong to prove the triangles congruent by the ASA postulate?

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14. Find x.

$6x + 6x + 3x = 180$
 $15x = 180$
 $x = 16$

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15. Find x.

$x + 11 = 4x - 13$
 $-x \quad -x$
 $11 = 3x - 13$
 $13 \quad +13$
 $24 = 3x$
 $\frac{24}{3} = \frac{3x}{3}$
 $8 = x$

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16. Find x.

$6x - 12 = x + x$
 $6x - 12 = 2x$
 $-6x \quad -6x$
 $-12 = -4x$
 $\frac{-12}{-4} = \frac{-4x}{-4}$
 $3 = x$

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17. Find x.

$7x + 7 + 5x + 14 + 6x + 15 = 180$
 $18x + 36 = 180$
 $-36 \quad -36$
 $18x = 144$
 $\frac{18x}{18} = \frac{144}{18}$
 $x = 8$

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