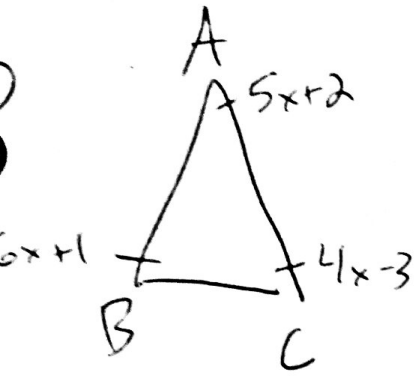


Geo HW 3-1 Answers



* 3 int \angle s of Δ total 180°

$$5x+2 + 6x+1 + 4x-3 = 180$$

$$15x = 180$$

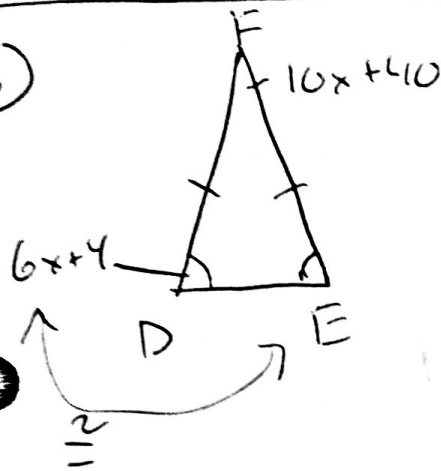
$$x = 12$$

$$m\angle A = 5(12) + 2 = 62^\circ$$

$$m\angle B = 6(12) + 1 = 73^\circ$$

$$m\angle C = 4(12) - 3 = 45^\circ$$

$\overline{AC}, \overline{BC}, \overline{AB} \rightarrow$ larger side across from larger \angle



* 3 int \angle s $\Delta = 180$

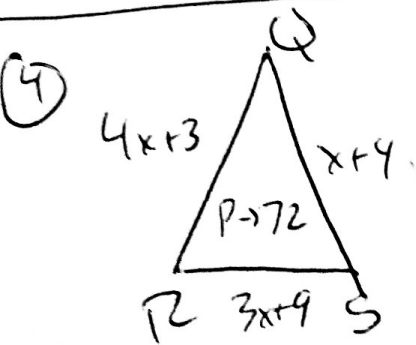
$$6x+4 + 6x+4 + 10x+40 = 180$$

$$22x + 48 = 180$$

$$22x = 132$$

$$x = 6$$

$$m\angle E = 6(6) + 4 = 40^\circ$$



3 sides total Perim

$$4x+3 + x+4 + 3x+9 = 72$$

$$8x + 16 = 72$$

$$8x = 56$$

$$x = 7$$

$$q = 3(7) + 9 = 30$$

$$r = 3(7) + 9 = 30$$

$$s = 4(7) + 3 = 31$$

$\angle R, \angle Q, \angle S$

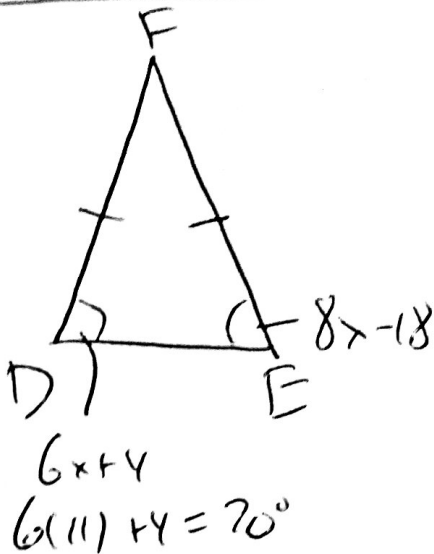
smaller \angle across from smaller side

- (5) a) No $3+3 \not> 7$ b) yes $4+5 > 6$ scalene c) yes $5+12 > 13$ scalene
 d) No $8+20 \not> 28$ d) yes $7+7 > 7$ equilateral, acute

⑥ $12 - 5 = 7$
 $12 + 5 = 17$

$7 < 3^{\text{rd}} \text{ side} < 17$

⑦



* base \angle 's of isos $\Delta \cong$

$$6x + 4 = 8x - 18$$

$$22 = 2x$$

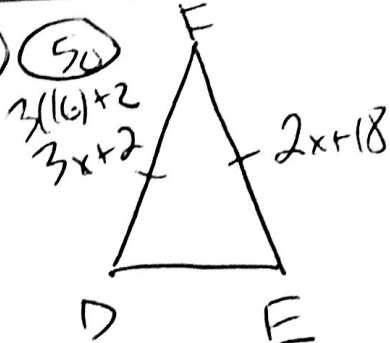
$$x = 11$$

$$70 + 70 = \overset{180}{-140}$$

* 3 \angle 's of $\Delta = 180$

$$\boxed{40^\circ} = m\angle F$$

⑧



* legs of isos $\Delta \cong$

$$3x + 2 = 2x + 18$$

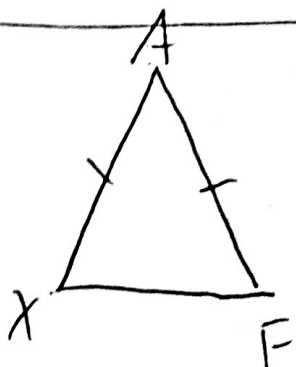
$$x = 16$$

$$50 - 50 = 0$$

$$50 + 50 = 100$$

$$\boxed{0 < \angle E < 100}$$

⑨



* legs isos $\Delta \cong$

$$x^2 + x - 2 = 3x + 6$$

$$x^2 - 2x - 8 = 0$$

$$(x - 4)(x + 2) = 0$$

$$\boxed{x = 4} \quad x = -2$$

$$3(4) + 6 = 18$$

$$4^2 + 4 - 2 = 18$$

$$4^2 + 10 = 26$$

$$\boxed{62 \rightarrow P}$$

⑩ * 3 int \angle 's = 180

$\boxed{\text{Scalene acute}}$

$$10x - 8 + 3x + 3 + x^2 + x + 9 = 180$$

$$x^2 + 14x + 4 = 180$$

$$x^2 + 14x - 176 = 0$$

$$(x - 8)(x + 22) = 0$$

$$\boxed{x = 8} \quad x = -22$$

$$10(8) - 8 = 72^\circ$$

$$3(8) + 3 = 27^\circ$$

$$8^2 + 8 + 9 = 81^\circ$$