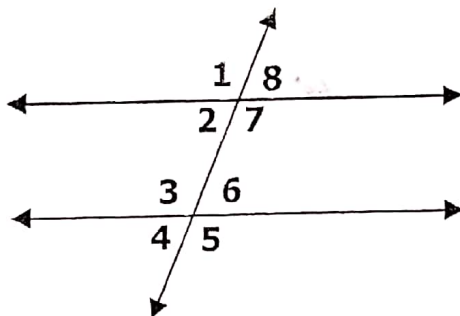


Unit 7/8 Study Guide

In the figure, $l \parallel m$. Find the measure of each angle. Each problem is different.



- 1) If $m\angle 7 = 100^\circ$, then $m\angle 3 = \underline{100^\circ}$
- 2) If $m\angle 7 = 175^\circ$, then $m\angle 6 = \underline{5^\circ}$
- 3) If $m\angle 7 = 120^\circ$, then $m\angle 5 = \underline{120^\circ}$
- 4) If $m\angle 4 = 20^\circ$, then $m\angle 7 = \underline{160^\circ}$

- 5) If $m\angle 3 = 140^\circ$, then $m\angle 8 = \underline{40^\circ}$
- 6) If $m\angle 4 = 30^\circ$, then $m\angle 1 = \underline{150^\circ}$
- 7) If $m\angle 4 = 40^\circ$, then $m\angle 2 = \underline{40^\circ}$
- 8) If $m\angle 7 = 125^\circ$, then $m\angle 4 = \underline{55^\circ}$

Find the dilated coordinates with the given scale factor.

- 9) $P(-5, -6), Q(-1, 2), R(4, 4), S(1, -3)$

Dilation of 2

$P': \underline{(-10, -12)}$

$Q': \underline{(-2, 4)}$

$R': \underline{(8, 8)}$

$S': \underline{(2, -6)}$

- 10) $D(-7, 0), E(-7, -5), F(-2, -5)$

Dilation of $\frac{1}{5}$

$D': \underline{(-\frac{7}{5}, 0)}$

$E': \underline{(-\frac{7}{5}, -1)}$

$F': \underline{(-\frac{2}{5}, -1)}$

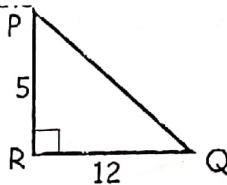
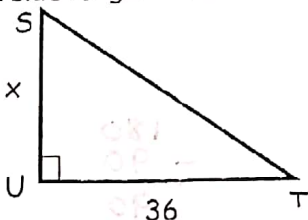
11) REFERRING TO DILATION

If $k > 1$, then the figure will grow

If $0 < k < 1$, then the figure will shrink

If $k = 1$, then the figure will stay same

12) If $\triangle PQR$ is similar to $\triangle STU$, find the missing value x



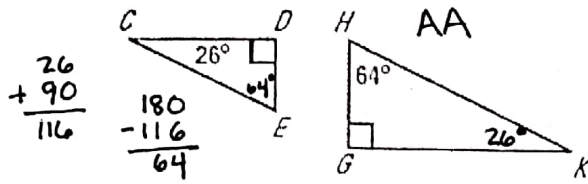
$\frac{5}{x} = \frac{12}{36}$

$\frac{12x}{12} = \frac{180}{12}$

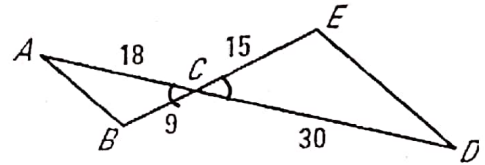
$x = 15$

Determine whether the triangles are similar by AA, SAS, SSS. If they are, state the similar statement.

13)



15)



$$\frac{9}{15} = \frac{3}{5} \quad \checkmark \quad \text{SAS}$$

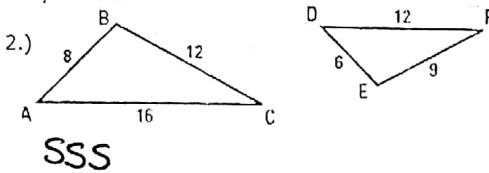
$$\frac{18}{30} = \frac{3}{5}$$

14)

$$\frac{8}{16} = \frac{3}{4} \quad \checkmark$$

$$\frac{9}{12} = \frac{3}{4} \quad \checkmark$$

$$\frac{12}{16} = \frac{3}{4} \quad \checkmark$$

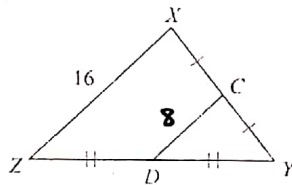


Find the missing length indicated

16)

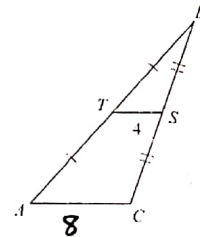
Find CD

$$\therefore \frac{16}{8} = \frac{2}{1}$$



17)

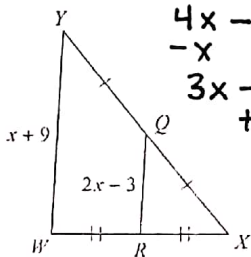
Find AC



$$4 \times 2 = 8$$

Solve for x

18)



$$2(2x - 3) = x + 9$$

$$4x - 6 = x + 9$$

$$-x \quad -x$$

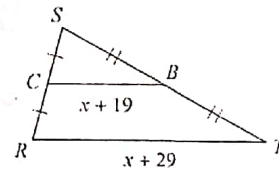
$$3x - 6 = 9$$

$$+6 \quad +6$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$\boxed{x = 5}$$

19)



$$2(x + 19) = x + 29$$

$$2x + 38 = x + 29$$

$$-x \quad -x$$

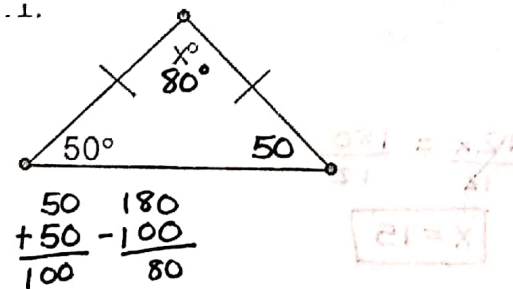
$$x + 38 = 29$$

$$-38 \quad -38$$

$$\boxed{x = -9}$$

Solve for x given the following isosceles triangles.

20)



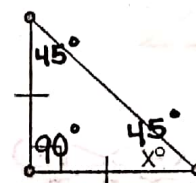
$$\frac{50}{100} = \frac{180}{80}$$

$$\frac{180}{80} = \frac{100}{50}$$

$$\frac{180}{80} = \frac{100}{50}$$

$$\frac{180}{80} = \frac{100}{50}$$

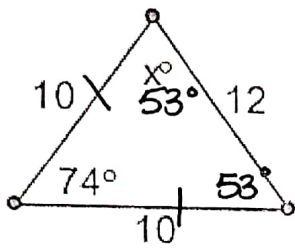
21)



$$\frac{180}{90} = \frac{90}{45}$$

$$\frac{90}{45} = \frac{180}{90}$$

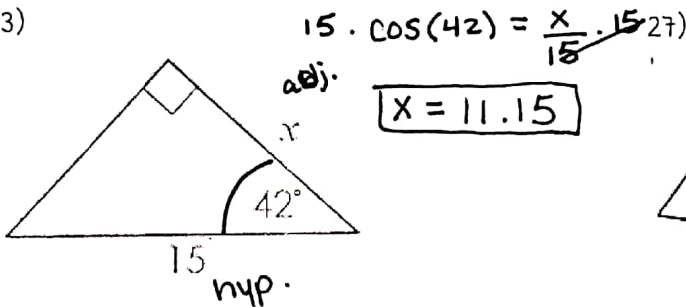
22)



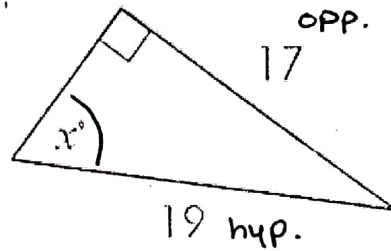
$$\frac{180 - 74}{106} = \frac{106}{2 \cdot 53}$$

Solve for x by using SOH CAH TOA

23)



$$x = 11.15$$

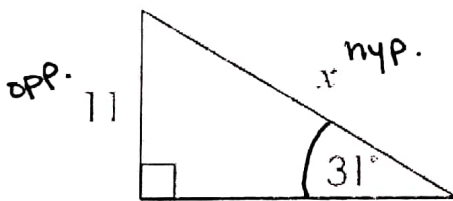


$$\sin x = \frac{17}{19}$$

$$x = \sin^{-1}\left(\frac{17}{19}\right)$$

$$x = 63.47^\circ$$

24)

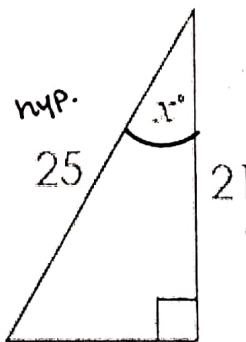


$$\sin(31) = \frac{11}{x}$$

$$x = \frac{11}{\sin(31)}$$

$$x = 21.36$$

28)

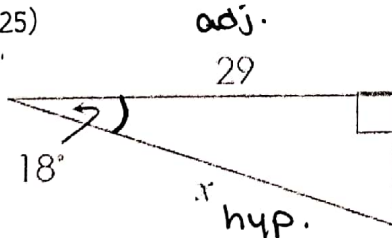


$$\cos x = \frac{21}{25}$$

$$x = \cos^{-1}\left(\frac{21}{25}\right)$$

$$x = 32.86^\circ$$

25)

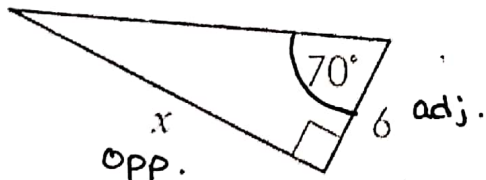


$$\cos(18) = \frac{29}{x}$$

$$x = \frac{29}{\cos(18)}$$

$$x = 30.49$$

26)



$$6 \cdot \tan(70) = \frac{x}{6} \cdot 6$$

$$x = 16.48$$