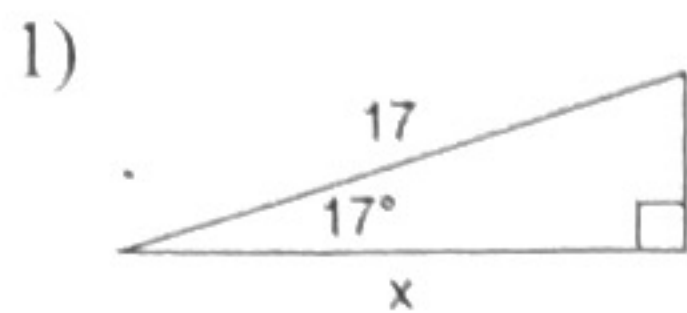


Worksheet E

Date _____ Block _____

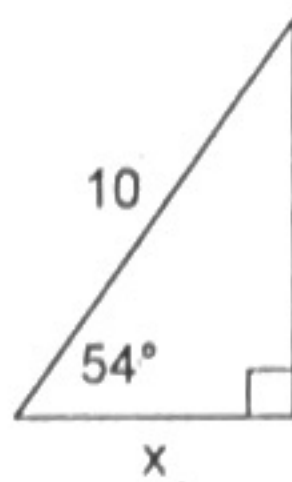
Find the missing side. Round to the nearest tenth.



$$\cos 17 = \frac{x}{17}$$

$$x = 16.26$$

2)



$$\cos 54 = \frac{x}{10}$$

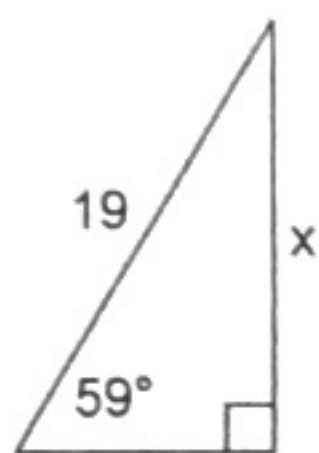
$$\frac{10}{1} \cdot 0.5878 = \frac{x}{10} \cdot \frac{10}{1}$$

$$x = 5.88$$

Steps

- ① choose trig function
- ② write equation
- ③ calculate trig
- ④ solve

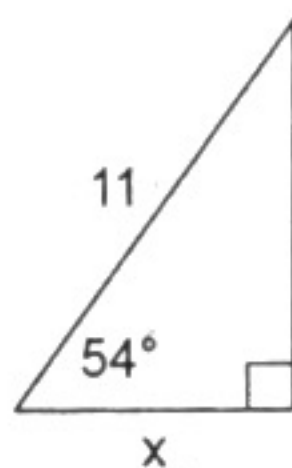
3)



$$\sin 59 = \frac{x}{19}$$

$$x = 16.29$$

4)

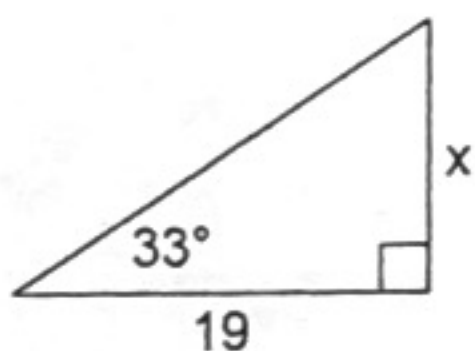


$$\cos 54 = \frac{x}{11}$$

$$\frac{11}{1} \cdot 0.5878 = \frac{x}{11} \cdot \frac{11}{1}$$

$$x = 6.47$$

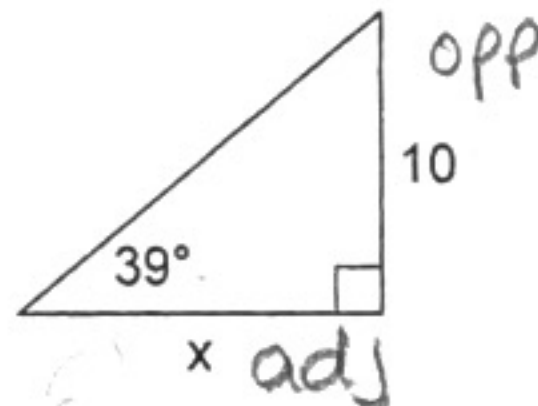
5)



$$\tan 33 = \frac{x}{19}$$

$$x = 12.34$$

6)



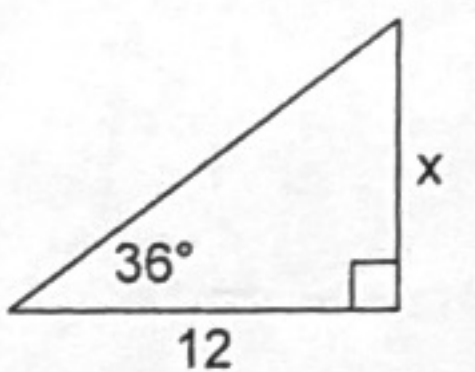
$$\tan 39 = \frac{10}{x}$$

$$\frac{x}{1} \cdot 0.8098 = \frac{10}{x} \cdot \frac{x}{1}$$

$$\begin{array}{r} 0.8098x = 10 \\ \hline 0.8098 \quad 0.8098 \end{array}$$

$$x = 12.35$$

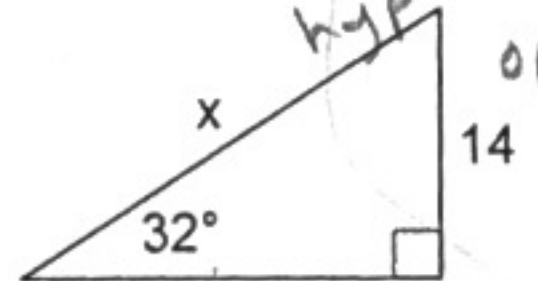
7)



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

$$x = 8.72$$

8)



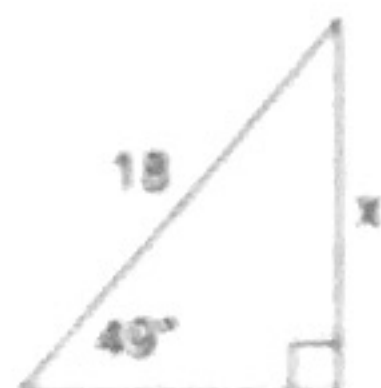
$$\sin 32 = \frac{14}{x}$$

$$\frac{x}{1} \cdot 0.5299 = \frac{14}{x} \cdot \frac{x}{1}$$

$$\begin{array}{r} 0.5299x = 14 \\ \hline 0.5299 \quad 0.5299 \end{array}$$

$$x = 26.42$$

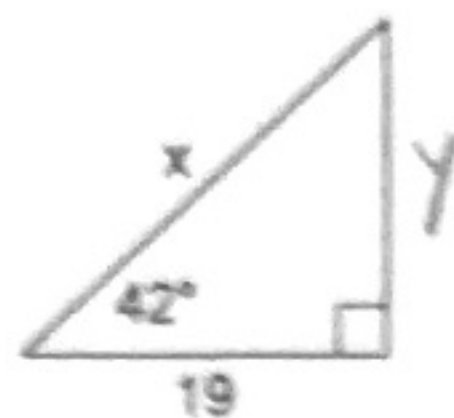
9)



$$\sin 49 = \frac{x}{18}$$

$$x = 13.59$$

10)



$$\cos 42 = \frac{19}{x}$$

$$\frac{x}{1} \cdot .743 = \frac{19}{x} \cdot \frac{x}{1}$$

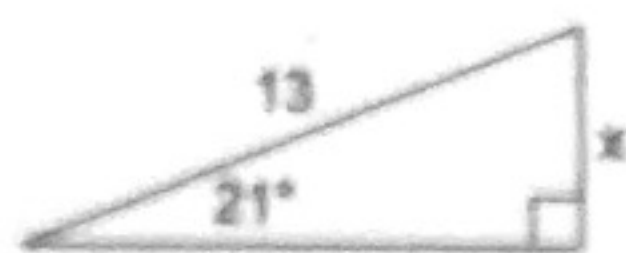
$$x = 25.57$$

$$\tan 42 = \frac{y}{19}$$

$$.900 = \frac{y}{19}$$

$$y = 17.11$$

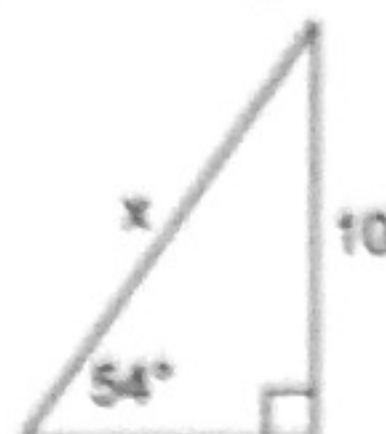
11)



$$\sin 21 = \frac{x}{13}$$

$$x = 4.66$$

12)



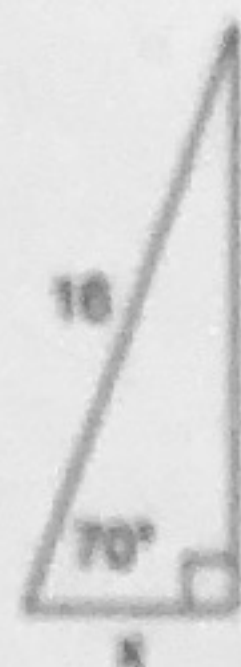
$$\sin 54 = \frac{10}{x}$$

$$\frac{x}{1} \cdot .809 = \frac{10}{x} \cdot \frac{x}{1}$$

$$\frac{.809x}{.809} = \frac{10}{.809}$$

$$x = 12.36$$

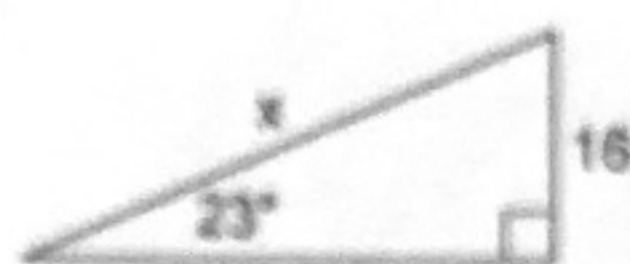
13)



$$\cos 70 = \frac{x}{16}$$

$$x = 5.47$$

14)



$$\sin 23 = \frac{16}{x}$$

$$\frac{x}{1} \cdot .3907 = \frac{16}{x} \cdot \frac{x}{1}$$

$$\frac{.3907x}{.3907} = \frac{16}{.3907}$$

$$x = 40.95$$

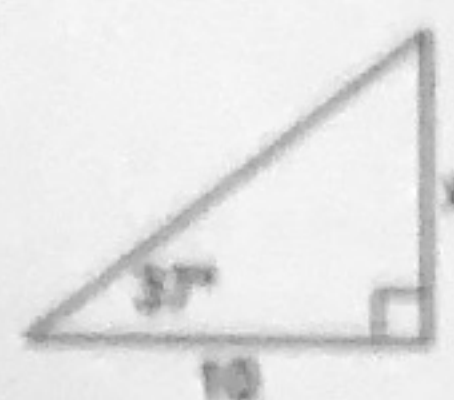
15)



$$\sin 29 = \frac{13}{x}$$

$$x = 26.82$$

16)



$$\tan 37 = \frac{x}{10}$$

$$x = 7.54$$

D2 p 475 # 3-6, 7-10

(3) $x = 7\sqrt{2}$

(4) $x = 5\sqrt{2} \cdot \sqrt{2}$
 $= 5\sqrt{4} = \boxed{10}$

(5) $x = 3$

(6) $x\sqrt{2} = 9$
 $x = \frac{9}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{9\sqrt{2}}{2}}$

(7) $x = 9\sqrt{3}$
 $y = 18$

(8) $x = 3$

$y = 6$

(9) $y = 12$

$x = 12\sqrt{3}$

(10) $2y = 12\sqrt{3}$

$y = 6\sqrt{3}$

$x = 6\sqrt{3} \cdot \sqrt{3}$

$6\sqrt{9} = \boxed{18}$

D3 9.4 & 9.5

p491 #3-6

p498 #3-16

p491

$$\textcircled{3} \tan R = \frac{45}{28}$$

$$\tan S = \frac{28}{45}$$

$$\textcircled{4} \tan D = \frac{7}{24}$$

$$\tan F = \frac{24}{7}$$

$$\textcircled{5} \tan H = \frac{1}{2}$$

$$\tan G = \frac{2}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$$

$$\textcircled{6} \tan J = \frac{5}{3}$$

$$\tan K = \frac{3}{5}$$

p498

$$\textcircled{3} \sin D = \frac{12}{15} \quad \sin E = \frac{9}{15}$$

$$\cos D = \frac{9}{15} \quad \cos E = \frac{12}{15}$$

$$\textcircled{13} \cos 59 = .5150$$

$$\sin 31$$

$$\textcircled{4} \sin D = \frac{35}{37} \quad \sin E = \frac{12}{37}$$

$$\cos D = \frac{12}{37} \quad \cos E = \frac{35}{37}$$

$$\textcircled{14} \cos 42 = .7431$$

$$\sin 48$$

$$\textcircled{5} \sin D = \frac{28}{53} \quad \sin E = \frac{45}{53}$$

$$\cos D = \frac{45}{53} \quad \cos E = \frac{28}{53}$$

$$\textcircled{15} \cos 73 = .2924$$

$$\sin 17$$

$$\textcircled{6} \sin D = \frac{36}{45} \quad \sin E = \frac{27}{45}$$

$$\cos D = \frac{27}{45} \quad \cos E = \frac{36}{45}$$

$$\textcircled{16} \cos 18 = .9511$$

$$\sin 72$$

$$\textcircled{9} .6018 \quad \cos 53$$

$$\textcircled{10} \sin 81 = .9877 \quad \cos 9$$

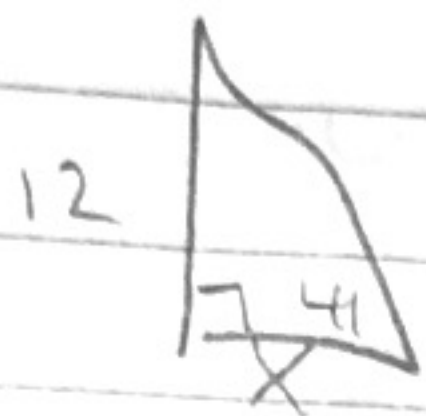
$$\textcircled{11} \sin 29 = .4848 \quad \cos 61$$

$$\textcircled{12} \sin 64 = .8988 \quad \cos 26$$

D4 p 491 #7-10

p498 #17-22

(7) SOH CAH (TOA)

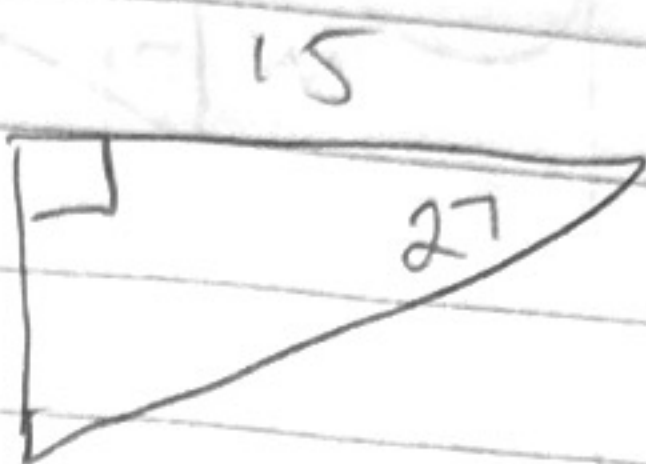


$$\tan 41 = \frac{x}{12}$$

$$.8693 = \frac{x}{12}$$

$$x = 10.43$$

(8)



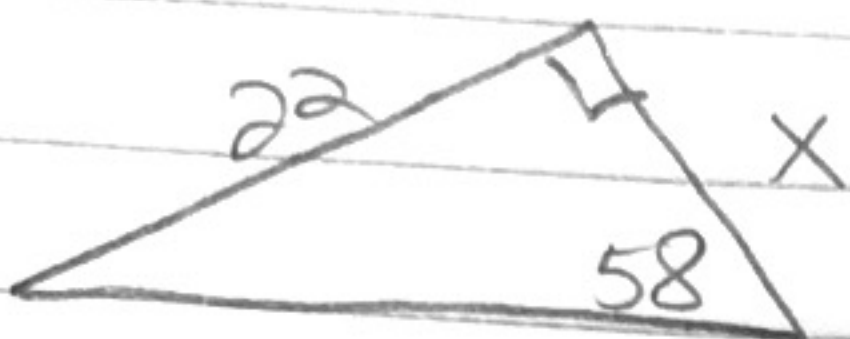
SOH CAH (TOA)

$$\tan 27 = \frac{x}{15}$$

$$.5095 = \frac{x}{15}$$

$$x = 7.64$$

(9)



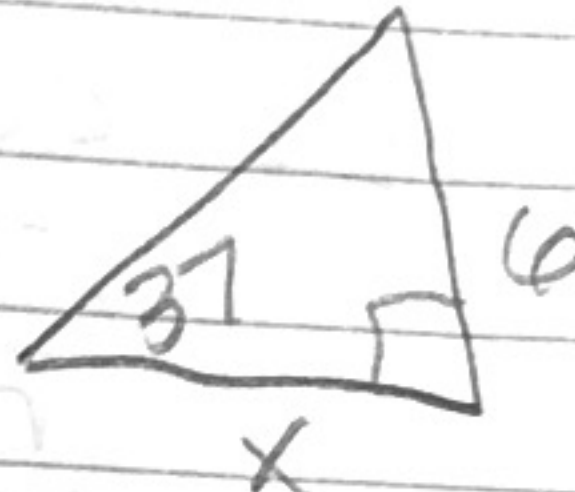
$$\tan 58 = \frac{22}{x}$$

$$\frac{x}{1} \cdot 1.600 = \frac{22}{x} \cdot \frac{x}{1}$$

$$1.600x = 22$$

$$x = 13.75$$

(10)



$$\tan 37 = \frac{6}{x}$$

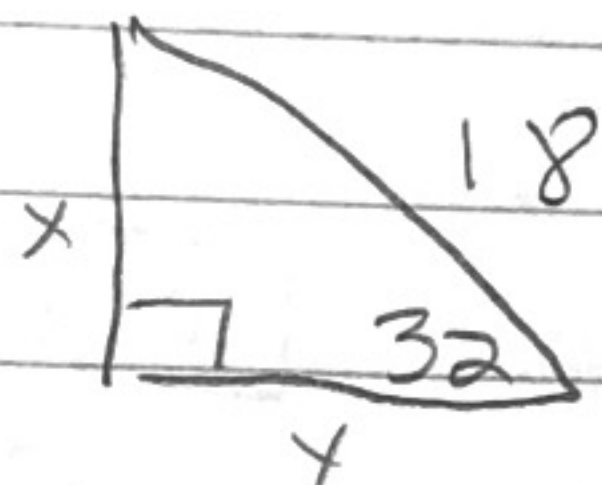
$$\frac{x}{1} \cdot .7536 = \frac{6}{x} \cdot \frac{x}{1}$$

$$.7536x = 6$$

$$.7536x = 6$$

$$x = 7.96$$

(11)



$$\sin 32 = \frac{x}{18}$$

$$.5299 = \frac{x}{18}$$

$$x = 9.54$$

(Y)

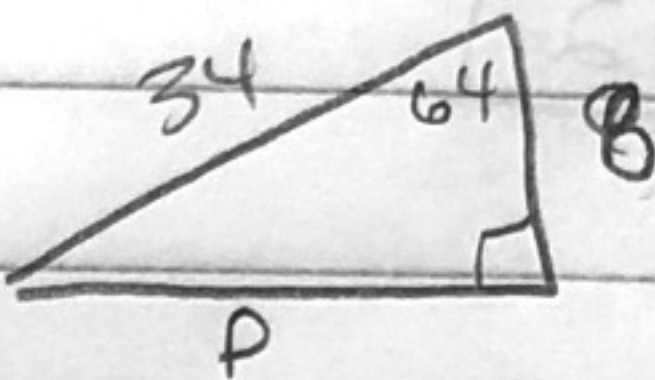
$$\cos 32 = \frac{y}{18}$$

$$.8481 = \frac{y}{18}$$

$$y = 15.26$$

(18)

(P)



$$\sin 64 = \frac{34}{p}$$

$$.8988 = \frac{34}{p}$$

$$p = 30.56$$

(q)

$$\cos 64 = \frac{q}{34}$$

$$.4384 = \frac{q}{34}$$

$$q = 14.90$$

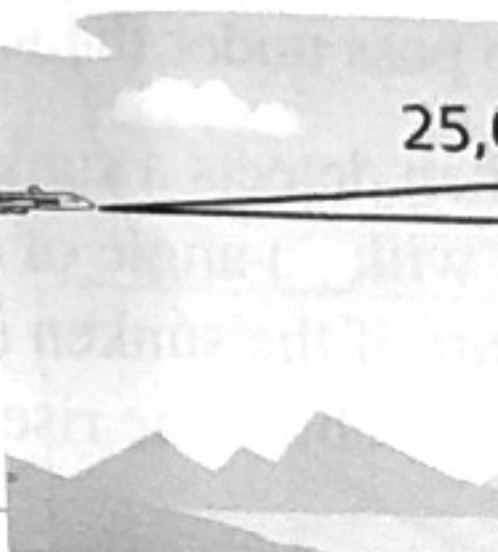
SOLVING You are extended. The angle of the string to the kite is 67°.

and label a diagram of the situation.

far off the ground is a pool 5 feet off the ground right where you hold the kite.

IG WITH MATHEMATICS

ads and low elevation. Determine the range of elevation to the top of the flying at an altitude of 25,000 feet at an angle of 1°.



many feet must the tower be?

es cannot come directly to any object in the plane fly in order to

AN ARGUMENT

$\sin 49^\circ = \frac{x}{16}$

ation $\cos 41^\circ =$

your reasoning

G Describe v

le in order to

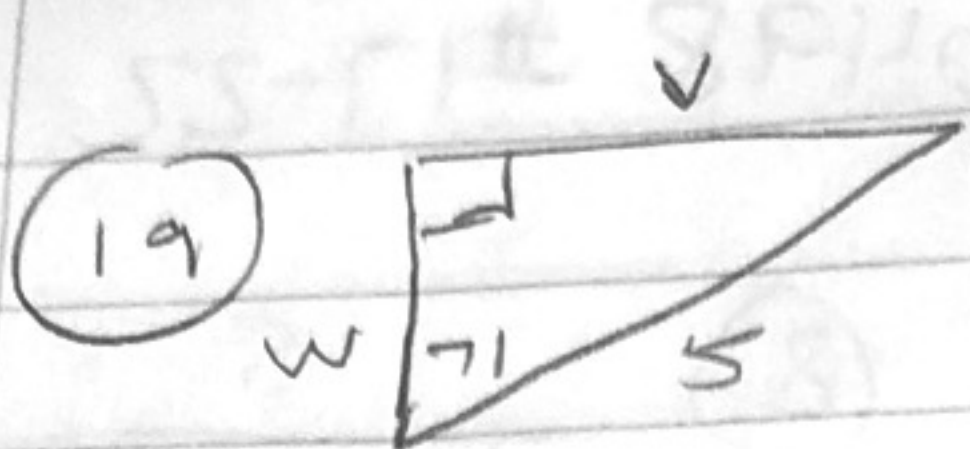
st know about

ratio.

MATICAL CO

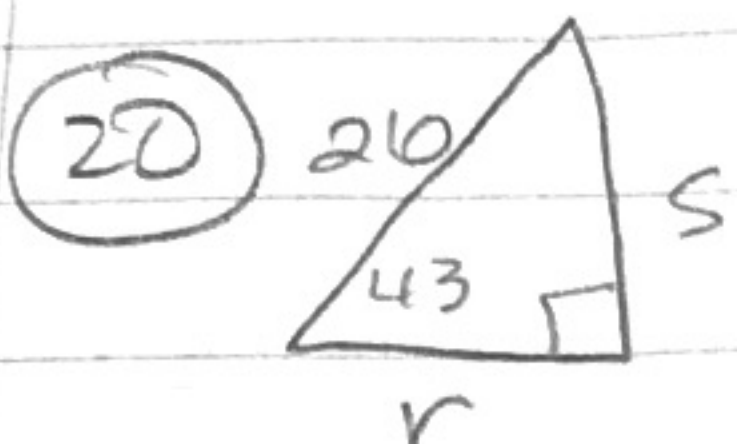
eral and ΔR

, and $m\angle T$



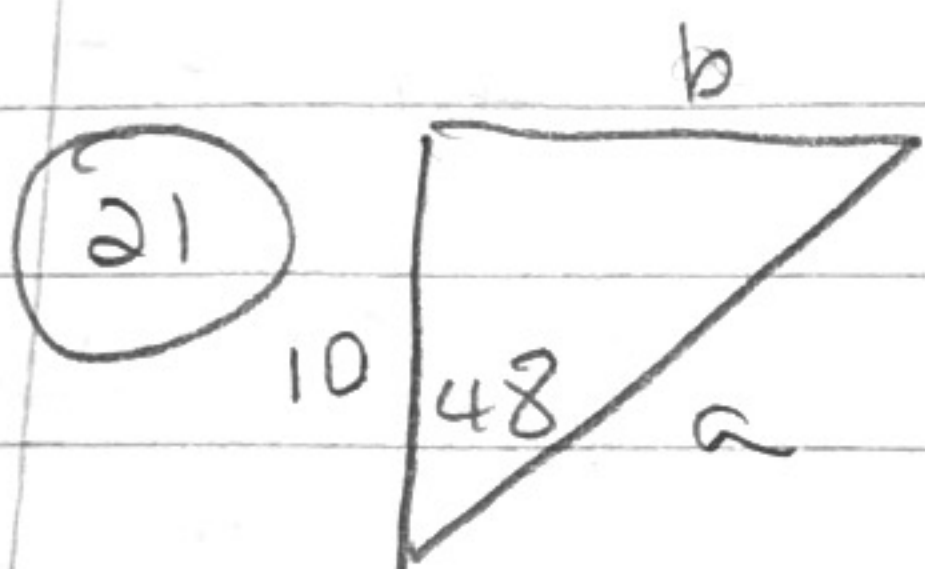
$$\begin{aligned} \boxed{v} \quad \sin 71 &= \frac{v}{5} \\ .9455 &= \frac{v}{5} \\ \boxed{v} &= 4.73 \end{aligned}$$

$$\begin{aligned} \boxed{w} \quad \cos 71 &= \frac{w}{5} \\ .3256 &= \frac{w}{5} \\ \boxed{w} &= 1.63 \end{aligned}$$



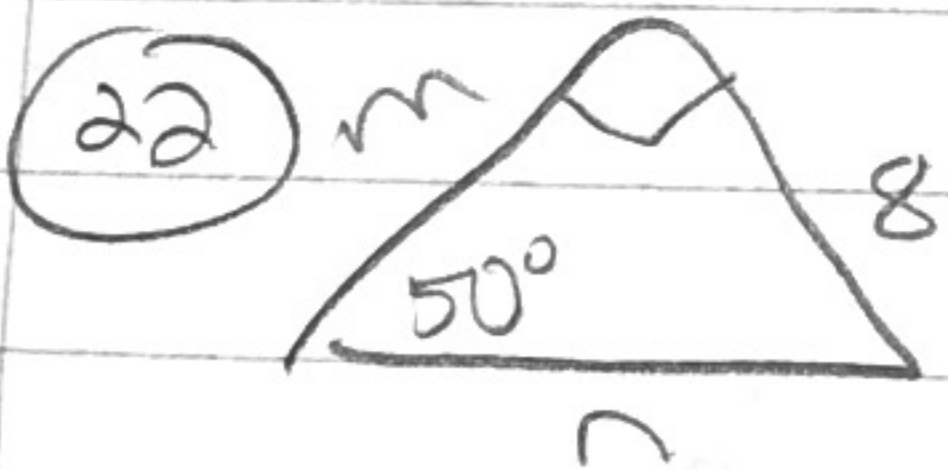
$$\begin{aligned} \boxed{r} \quad \cos 43 &= \frac{r}{20} \\ .7314 &= \frac{r}{20} \\ \boxed{r} &= 14.63 \end{aligned}$$

$$\begin{aligned} \boxed{s} \quad \sin 43 &= \frac{s}{20} \\ .6820 &= \frac{s}{20} \\ \boxed{s} &= 17.73 \end{aligned}$$



$$\begin{aligned} \boxed{a} \quad \cos 48 &= \frac{10}{a} \\ .6691 &= \frac{10}{a} \\ \boxed{a} &= 14.95 \end{aligned}$$

$$\begin{aligned} \boxed{b} \quad \tan 48 &= \frac{b}{10} \\ 1.111 &= \frac{b}{10} \\ \boxed{b} &= 11.11 \end{aligned}$$



$$\begin{aligned} \boxed{m} \quad \tan 50 &= \frac{8}{m} \\ \frac{m}{1} \cdot 1.19 &= \frac{8}{m} \cdot \frac{m}{1} \\ 1.19m &= 8 \\ \frac{1.19}{1.19} & \quad \frac{1.19}{1.19} \\ \boxed{m} &= 6.72 \end{aligned}$$

$$\begin{aligned} \boxed{n} \quad \sin 50 &= \frac{8}{n} \\ \frac{n}{1} \cdot .766 &= \frac{8}{n} \cdot \frac{n}{1} \\ .766n &= 8 \\ \frac{.766}{.766} & \quad \frac{.766}{.766} \\ \boxed{n} &= 10.44 \end{aligned}$$

Chap 9 D1

Chap 9 p 468 #3-10, 21-27 odd

$$\textcircled{3} \quad 7^2 + 11^2 = x^2$$

$$49 + 121 = x^2$$

$$170 = x^2$$

$$X = 13.04$$

Not Triple

$$\textcircled{4} \quad 16^2 + 30^2 = x^2$$

$$256 + 900 = x^2$$

$$x^2 = 1156$$

$$X = 34$$

yes TRIPLE

$$\textcircled{5} \quad 9^2 + 40^2 = x^2$$

$$81 + 1600 = x^2$$

$$X = 41$$

yes

Triple

$$\textcircled{6} \quad 4^2 + 6^2 = x^2$$

$$16 + 36 = x^2$$

$$X = 7.2$$

not triple

$$\textcircled{7} \quad 8^2 + x^2 = 17^2$$

$$64 + x^2 = 289$$

$$x^2 = 225$$

$$X = 15$$

yes TRIPLE

$$\textcircled{8} \quad x^2 + 9^2 = 24^2$$

$$x^2 + 81 = 576$$

$$x^2 = 495$$

$$X = 22.25$$

NOT triple

$$\textcircled{9} \quad x^2 + 48^2 = 50^2$$

$$x^2 + 2304 = 2500$$

$$x^2 = 196$$

$$X = 14$$

yes triple

$$\textcircled{10} \quad 7^2 + x^2 = 9^2$$

$$49 + x^2 = 81$$

$$x^2 = 32$$

$$X = 5.66$$

yes

triple

$$\textcircled{21} \quad 10^2 + 11^2 \quad \square \quad 14^2$$

$$100 + 121 \quad \square \quad 196$$

$$221 > 196$$

acute

$$\textcircled{23} \quad 12^2 + 16^2 \quad \square \quad 20^2$$

$$144 + 256 \quad \square \quad 400$$

$$\text{RIGHT} \quad 400 = 400$$

$$\textcircled{25} \quad (5.3)^2 + (6.7)^2 \quad \square \quad (7.8)^2$$

$$28.09 + 44.89 \quad \square \quad 60.84$$

Acute

$$72.98 > 60.84$$

$$\textcircled{27} \quad 24^2 + 30^2 \quad \square \quad 6\sqrt{43}$$

$$576 + 900 \quad \square \quad 1548$$

$$1476 < 1548$$

OBTUSE

$$a^2 + b^2 < c^2 \text{ obtuse}$$

$$a^2 + b^2 > c^2 \text{ acute}$$

Chap 9 D1

Chap 9 p 468 #3-10, 21-27 odd

$$\begin{aligned} (3) \quad 7^2 + 11^2 &= x^2 \\ 49 + 121 &= x^2 \\ 170 &= x^2 \end{aligned}$$

$$x = 13.04$$

Not Triple

$$\begin{aligned} (4) \quad 16^2 + 30^2 &= x^2 \\ 256 + 900 &= x^2 \\ x^2 &= 1156 \end{aligned}$$

$$x = 34$$

yes TRIPLE

$$\begin{aligned} (5) \quad 9^2 + 40^2 &= x^2 \\ 81 + 1600 &= x^2 \end{aligned}$$

$$x = 41$$

yes Triple

$$\begin{aligned} (6) \quad 4^2 + 6^2 &= x^2 \\ 16 + 36 &= x^2 \end{aligned}$$

$$x = 7.2$$

not triple

$$\begin{aligned} (7) \quad 8^2 + x^2 &= 17^2 \\ 64 + x^2 &= 289 \\ x^2 &= 225 \end{aligned}$$

$$x = 15$$

yes TRIPLE

$$\begin{aligned} (8) \quad x^2 + 9^2 &= 24^2 \\ x^2 + 81 &= 576 \\ x^2 &= 495 \end{aligned}$$

$$x = 22.25$$

NOT tr

$$\begin{aligned} (9) \quad x^2 + 48^2 &= 50^2 \\ x^2 + 2304 &= 2500 \\ x^2 &= 196 \end{aligned}$$

$$x = 14$$

yes triple

$$\begin{aligned} (10) \quad 7^2 + x^2 &= 9^2 \\ 49 + x^2 &= 81 \\ x^2 &= 32 \end{aligned}$$

$$x = 5.66$$

$$(21) \quad 10^2 + 11^2 \quad \square \quad 14^2$$

$$100 + 121 \quad \square \quad 196$$

$$221 > 196$$

acute

$$(23) \quad 12^2 + 16^2 \quad \square \quad$$

$$144 + 256 \quad \square \quad$$

$$\text{RIGHT } 400 =$$

$$(25) \quad (5.3)^2 + (6.7)^2 \quad \square \quad (7.8)^2$$

$$28.09 + 44.89 \quad \square \quad 60.84$$

$$\text{Acute } 72.98 > 60.84$$

$$(27) \quad 24^2 + 30^2$$

$$576 + 900$$

$$1476$$

$$a^2 + b^2 < c^2 \text{ obtuse}$$

$$a^2 + b^2 > c^2 \text{ acute}$$