① $\frac{(x-2)}{3} = \frac{8}{3x}$

$3x^2 - 6x = 24$

$3x^2 - 6x - 24 = 0$

$3(x^2 - 2x - 8) = 0$

$3(x-4)(x+2) = 0$

$3 \neq 0$ $x-4=0$ $x+2=0$

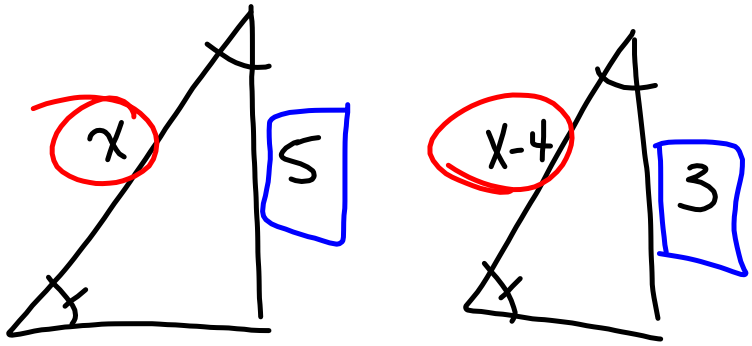
$x=4$ $x=-2$

(2) angles

Sides ~ Δ's ≅ proportional

False

3



$$\frac{x}{(x-4)} = \frac{5}{3}$$

$3x = 5(x-4)$

$3x = 5x - 20$

$-2x = -20$

$x = 10$

(4) $\Delta ABC \sim \Delta RST$

$$\frac{AB}{RS} = \frac{BC}{ST} = \frac{AC}{RT}$$

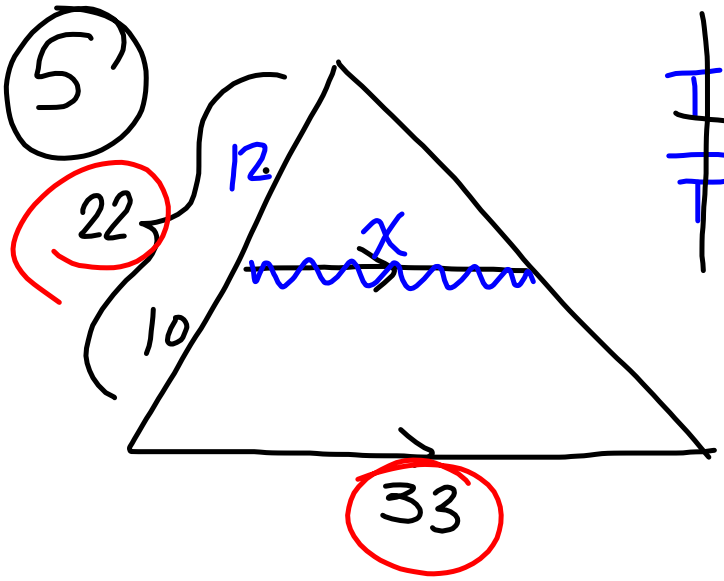
$$\frac{8}{RS} = \frac{BC}{RT} = \frac{9}{15}$$

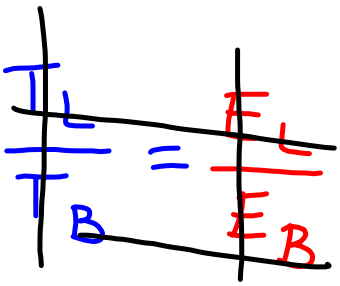
$9RS = 8 \cdot 15$

$\frac{9}{1}RS = \frac{120}{9}$

$RS = \frac{40}{3}$ or $13\frac{1}{3}$ or $13.\overline{3}$

5



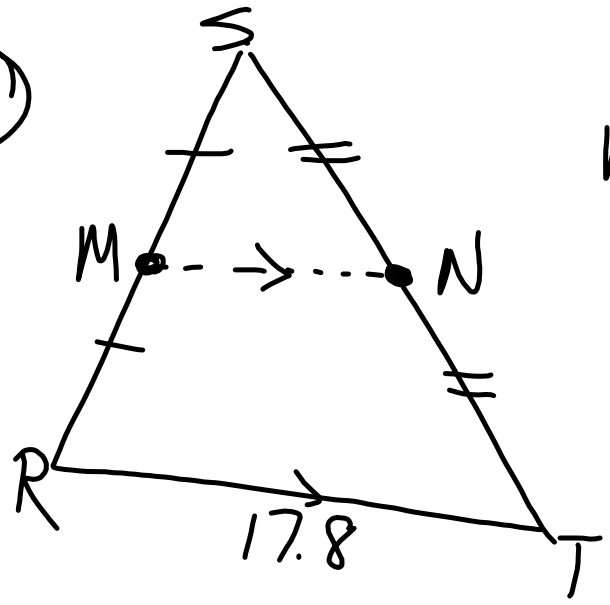


$$\frac{12}{x} = \frac{22}{33}$$

$$22x = 396$$

$$x = 18$$

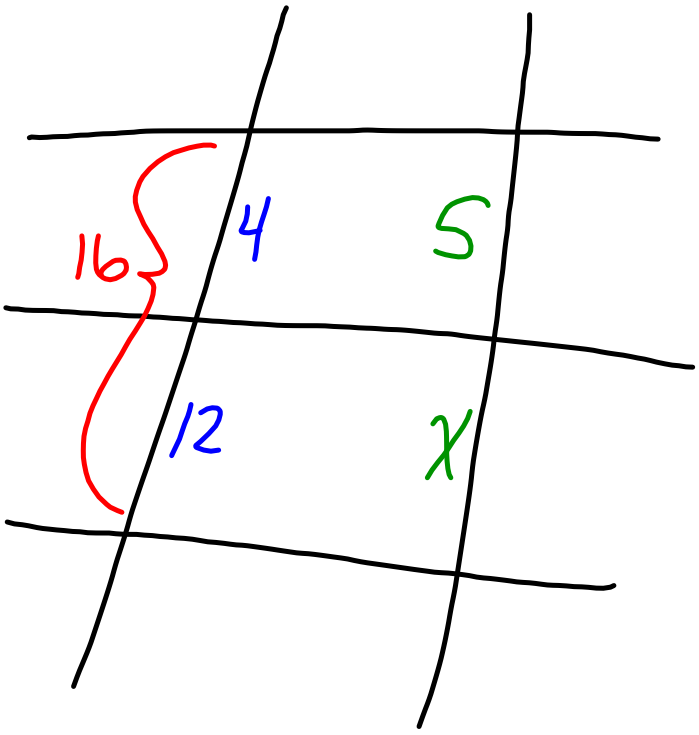
6



$MN = \frac{1}{2} RT$

$MN = \frac{17.8}{2}$

$MN = 8.9$



$$\frac{5}{4} = \frac{x}{12}$$

$$4x = 60$$

$$x = 15$$

(8)

$\triangle ABC \sim \triangle DEF$

$\frac{AB}{DE}^{5} = \frac{BC}{EF}^{6} = \frac{AC}{DF}^{7}$

$\frac{P = 18}{p \quad ?}$

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

$\frac{5p}{5} = \frac{54}{5}$

$p = 10.8$

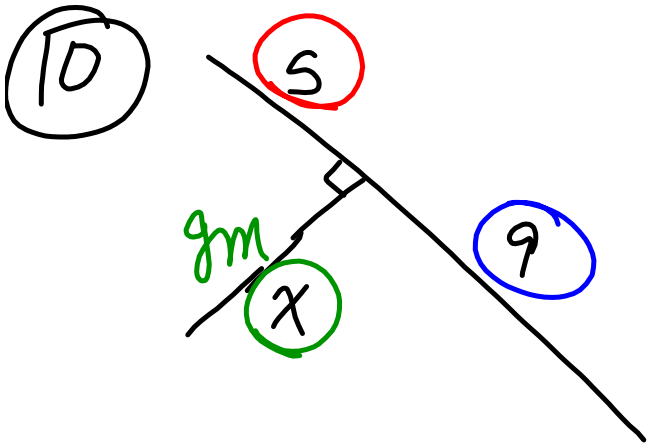
9

$$\frac{6}{gm} = \frac{gm}{8}$$

$$\sqrt{gm^2} = \sqrt{48}$$

$$gm = \sqrt{16}\sqrt{3}$$

$$gm = 4\sqrt{3}$$

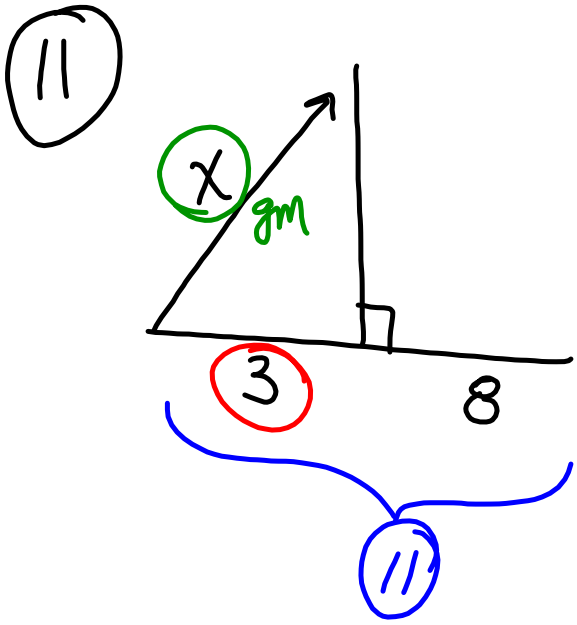


$$\frac{5}{gm} = \frac{gm}{9}$$

$$\sqrt{gm^2} = \sqrt{45}$$

$$gm = \sqrt{9}\sqrt{5}$$

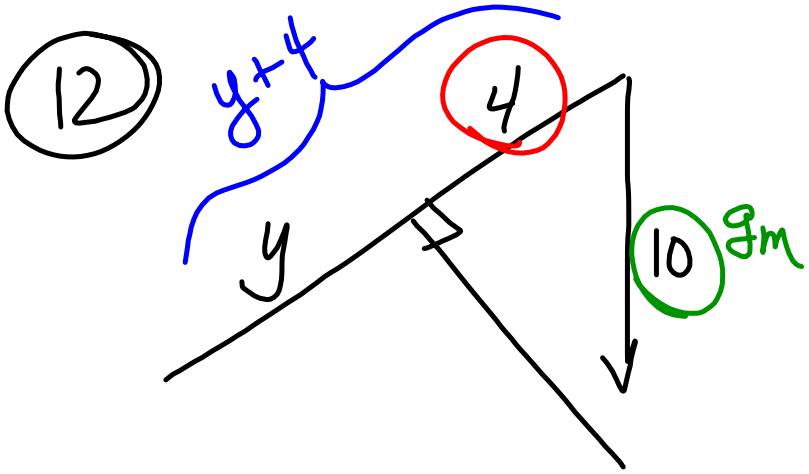
$$gm = 3\sqrt{5}$$



$$\frac{3}{x} = \frac{x}{11}$$

$$\sqrt{x^2} = \sqrt{33}$$

$$x = \sqrt{33}$$



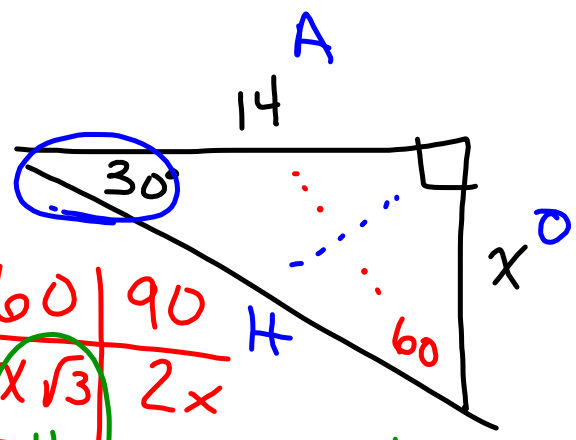
$$\frac{4}{10} = \frac{10}{y+4}$$

$$4y + 16 = 100$$

$$4y = 84$$

$$y = 21$$

13



30	60	90
x	$x\sqrt{3}$	2x
	14	
short	long	hyp

$\tan 30 = \frac{x}{14}$

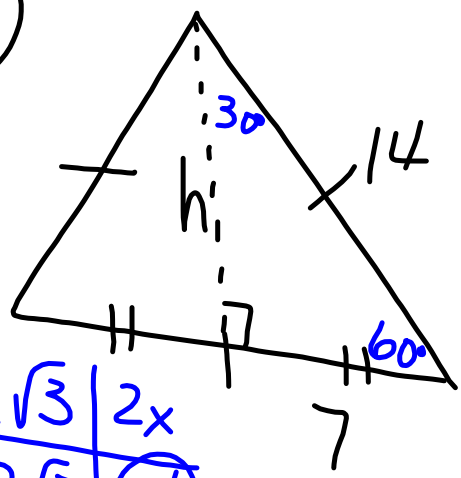
$x = 14(\tan 30)$

$\frac{x\sqrt{3}}{\sqrt{3}} = \frac{14}{\sqrt{3}}$

$x = \frac{14}{\sqrt{3}}\left(\frac{\sqrt{3}}{\sqrt{3}}\right)$

$x = \frac{14\sqrt{3}}{3}$

(14)



X	$X\sqrt{3}$	2x
7	$7\sqrt{3}$	(14)

$42 \div 3 = 14$

PT

$a^2 + b^2 = c^2$

$7^2 + b^2 = 14^2$

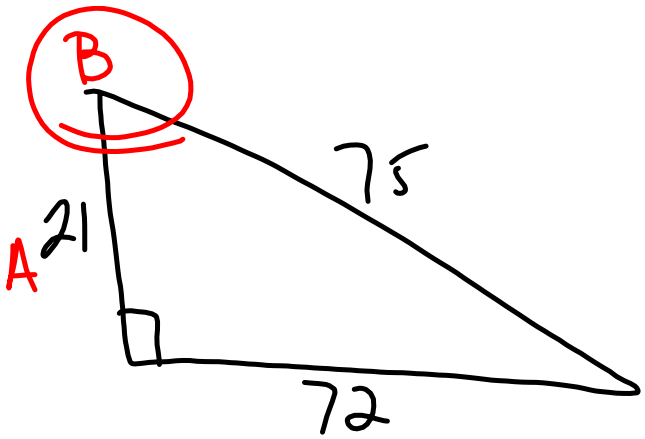
$49 + b^2 = 196$

$b^2 = 147$

$b = \sqrt{147}$

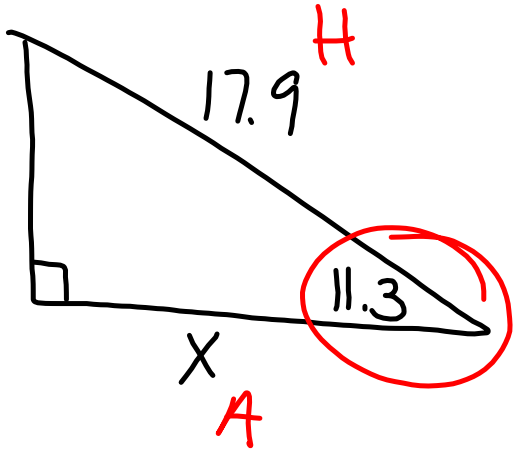
$b = 7\sqrt{3}$

15



$\tan B = \frac{72}{21}$ or $\frac{24}{7}$

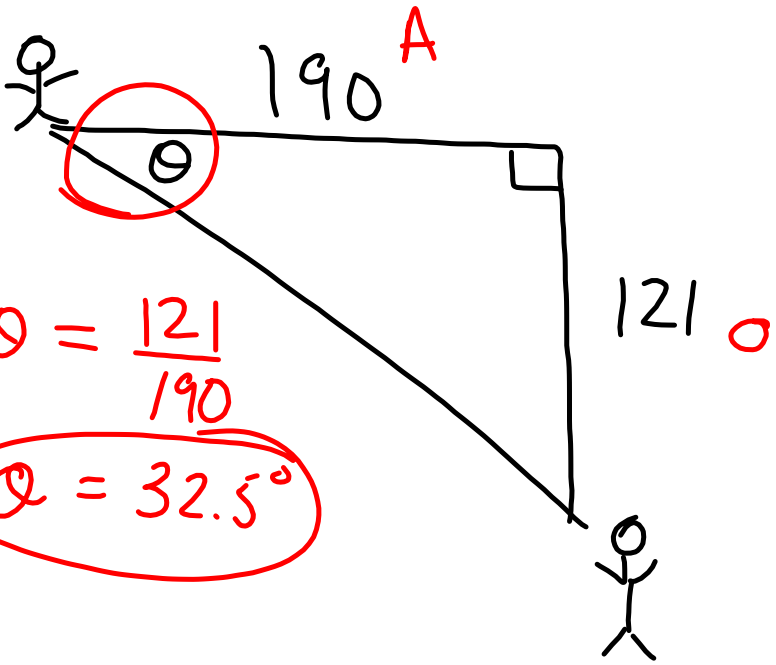
16



$\cos 11.3 = \frac{x}{17.9}$

$x = 17.9(\cos 11.3)$

17



$\tan^{-1}\theta = \frac{121}{190}$

$\theta = 32.5°$

18 law of sines

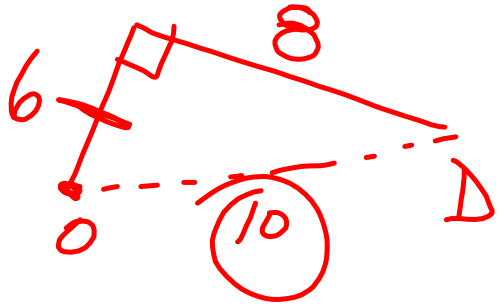
$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$A = 37°$, $B = 68°$, $a = 12$

$$\frac{b \sin 37}{\sin 37} = \frac{12(\sin 68)}{(\sin 37)}$$

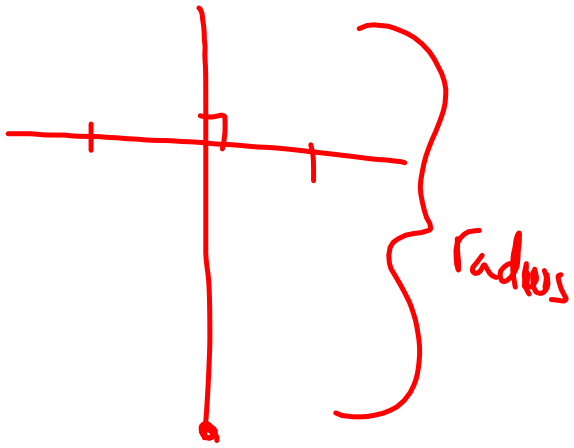
$b = 18.5$

(19)

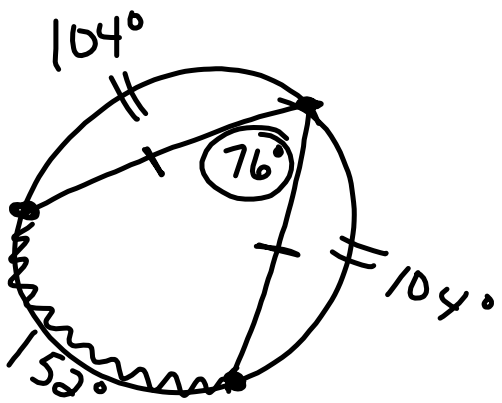


P.T. $a^2 + b^2 = c^2$

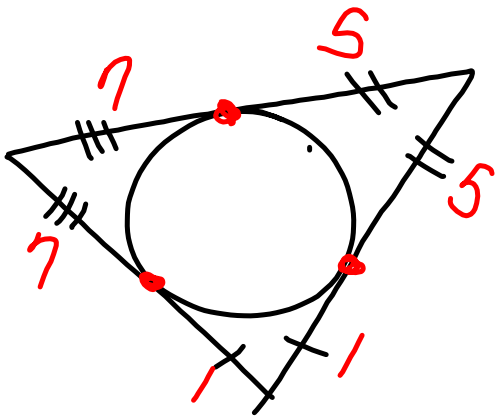
$6^2 + 8^2 = c^2$



20



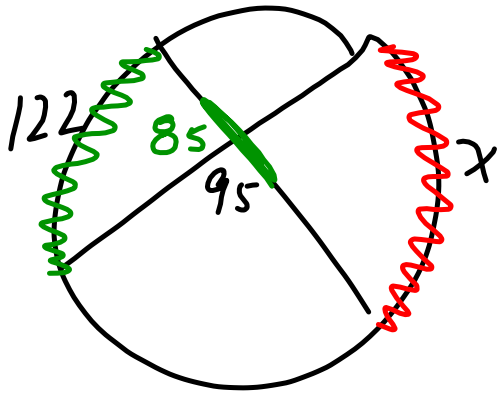
21



$P = 1+1+5+5+7+7$

$P = 26$

22



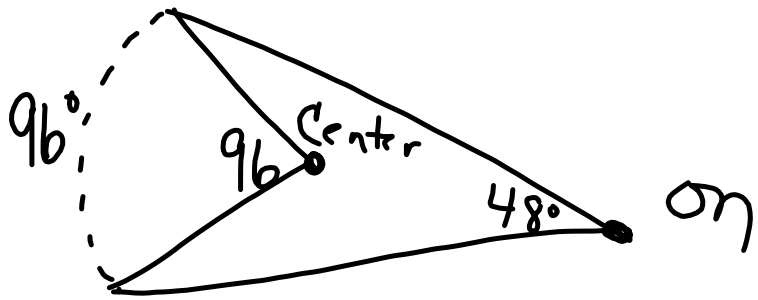
2 angle = big + small

$2(85) = 122 + x$

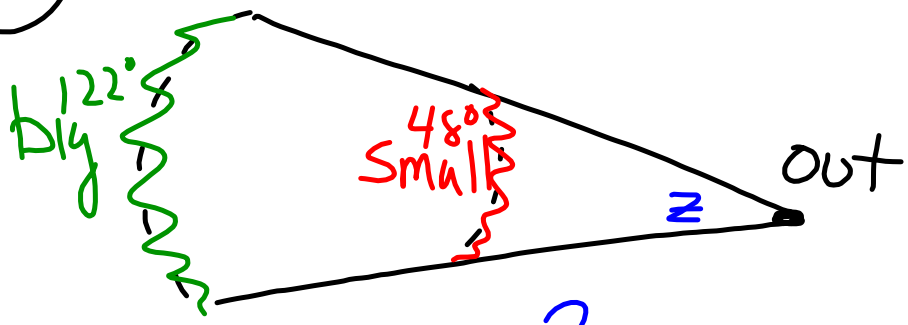
$170 = 122 + x$

$48 = x$

23



24

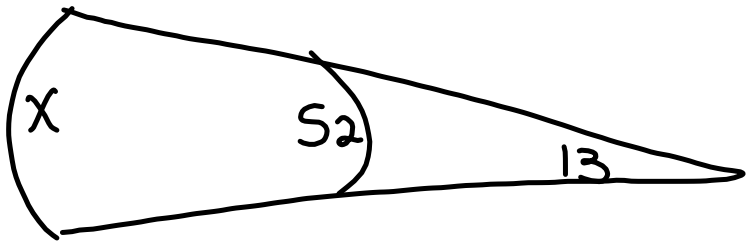


$2z = 122 - 48$

$\frac{2z}{2} = \frac{74}{2}$

$z = 37$

25

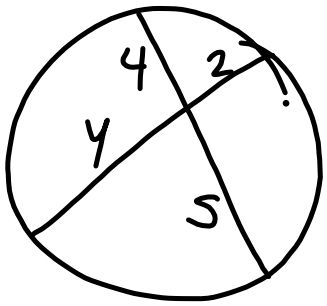


$2(13) = x - 52$

$26 = x - 52$

$78 = x$

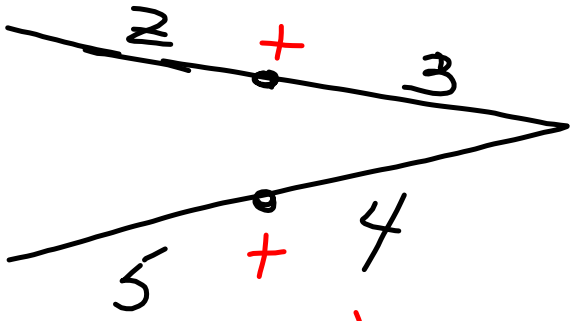
26



$4(5) = 2(y)$

$10 = y$

27



$3(z+3)=4(9)$

$3z+9=36$

$3z=27$

$z=9$

28 $S_i = (n-2)180$

$= (32-2)180$

$= 30(180)$

$S_i = 5400$

29 $S_i = (5-2)180$

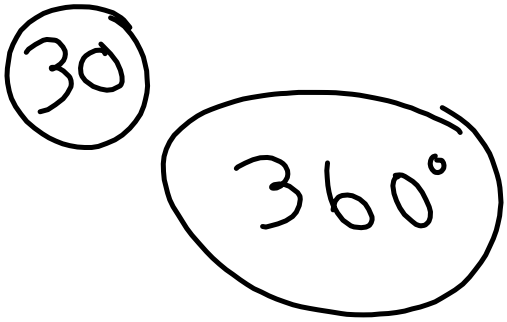
$= 540°$

$x + x-20 + x+15 + x+40 + 2x+10 = 540$

$6x + 45 = 540$

$6x = 495$

$x = 82.5$


30
360°

31

$$E = \frac{360^\circ}{n}$$

$$E = \frac{360}{15}$$

$$Ext = 24$$

But $Int + Ext = 180^\circ$

$Int = 156^\circ$

$$\frac{(n-2)180}{n} = Int\angle$$

32

$\frac{360}{n} = \frac{5^\circ}{1}$

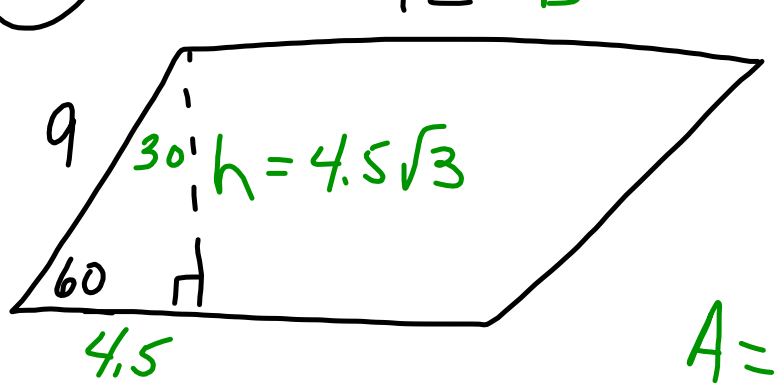
$5n = 360$

$n = 72$

$Si = (n-2)180$

$\frac{(n-2)180}{n} = 175$

33)



30	60	90
x	x√3	2x
4.5	4.5√3	9

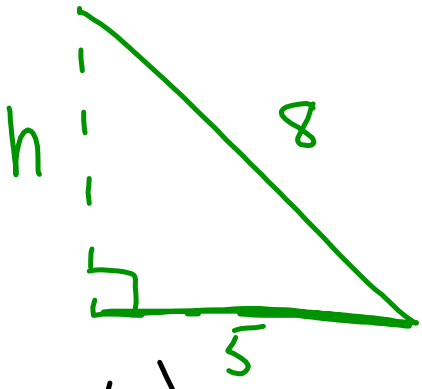
$A = \ell \cdot w$

$A = b \cdot h$

$A = 12(4.5\sqrt{3})$

$A = 93.5$

(34)



PT

$8^2 = 5^2 + h^2$

$64 - 25 = h^2$

$39 = h^2$

$\sqrt{39} = h$

$A = \frac{1}{2} h (b_1 + b_2)$

$A = \frac{1}{2} (\sqrt{39})(4 + 12)$

$A = 8\sqrt{39}$ or ~~$\approx$~~ (50)

35

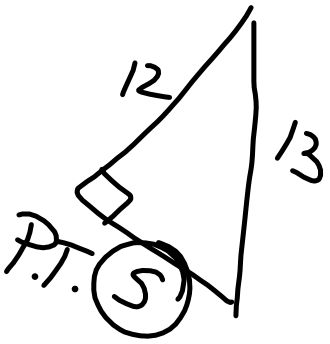
$A = \frac{1}{2} d_1 d_2$

$d_1 = 5 + 5$

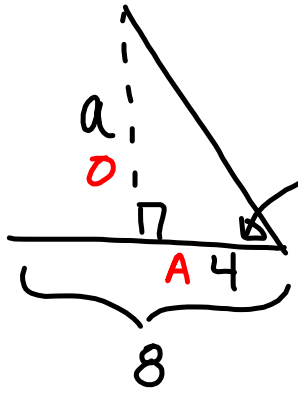
$d_2 = 12 + 12$

$A = \frac{1}{2}(10)(24)$

$A = 120$



36



$\frac{(n-2)180}{n}$ ÷ 2

$A = \frac{1}{2} a p$

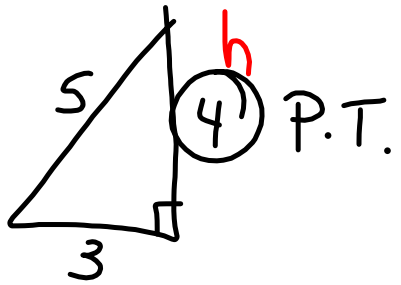
$A = \frac{1}{2}(64)(4)(\tan 67.5)$

$A = 309.0$

$\tan 67.5 = \frac{a}{4}$

$a = 4(\tan 67.5)$

37) $A = \frac{1}{2}bh$



P.T.

triangle$_1$ + triangle$_2$

$\frac{1}{2}(13)(4) + \frac{1}{2}(16)(5)$

$26 + 40$

66

38

$A = \pi r^2$

$A = \pi(8^2)$

$A = 64\pi$

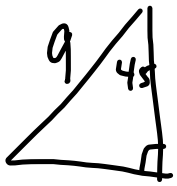
$C = 2\pi r$

$\frac{16\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$8 = r$

(40)

$S = Ph + 2B$



$h = \frac{9}{\sqrt{2}}$

45	45	90
x	x	$x\sqrt{2}$
		9

$x\sqrt{2} = 9$

$x = \frac{9}{\sqrt{2}}$

$A = \frac{1}{2}bh$

$P = \frac{9}{\sqrt{2}} + \frac{9}{\sqrt{2}} + 9$

$P = \frac{18}{\sqrt{2}} + 9$

$A = \frac{1}{2}\left(\frac{9}{\sqrt{2}}\right)\left(\frac{9}{\sqrt{2}}\right)$

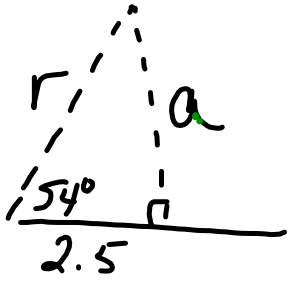
$A = \frac{1}{2}\left(\frac{81}{2}\right)$

$A = \frac{81}{4}$

$S = \left(\frac{18}{\sqrt{2}} + 9\right)(19) + 2\left(\frac{81}{4}\right)$

$S =$

(39) Circle – pentagon



$\tan 54 = \frac{a}{2.5}$

$a = 2.5(\tan 54)$

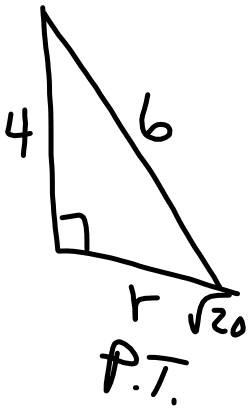
$\pi r^2 - \frac{1}{2} a p$

$\cos 54 = \frac{2.5}{r}$

$r = \frac{2.5}{\cos 54}$

$\pi\left(\frac{2.5}{\cos 54}\right)^2 - \frac{1}{2}(2.5\tan 54)(25)$

(41) $S = 2\pi rh + 2\pi r^2$



$S = 2\pi(\sqrt{20})4 + 2\pi(\sqrt{20})^2$

(42) $L = Ph$ $P = 6(8)$

$L = 48(18)$

$L = 864$

43

$V = Bh$

$V = (4.8)(6.3)(17)$

$V = 107.7$

44

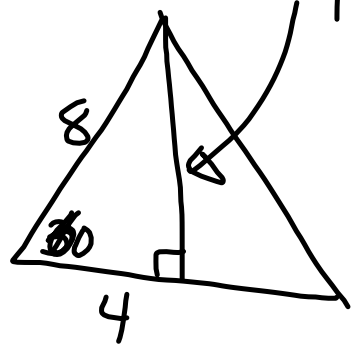
$V = \pi r^2 h$

$\frac{10.5}{2} = r$

$V = \pi(5.25)^2(12)$

$V = 330.75\pi$

45



$4\sqrt{3} = h$

$P = 3(8)$ or 24

$V = Bh$

$V = \frac{1}{2}(8)(4\sqrt{3})15$

$V = 415.69$

46

$$S = 4\pi r^2$$

$$S = 4\pi(6)^2$$

$$S = 452.4$$

47

$V = \frac{4}{3}\pi r^3$

$A = \pi r^2$

$49\pi = \pi r^2$

$49 = r^2$

$7 = r$

$V = \frac{4}{3}\pi(7)^3$

$V = 1436.7$