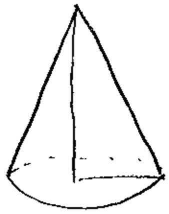
Geometry Review
June 2015

Name Key
Date: ______________ Period: ______________

**PART I: YOU MUST SHOW ALL WORK FOR FULL CREDIT!!!**

1.)



cone

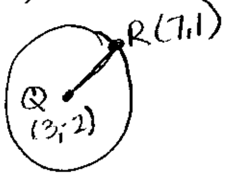
4

2.)

dilation changes size

4

3.)




$d = \sqrt{(7-3)^2 + (1-2)^2}$
$= \sqrt{4^2 + 3^2}$
$= \sqrt{16+9} = \sqrt{25}$
5

$d = 5(2)$
$\boxed{10}$

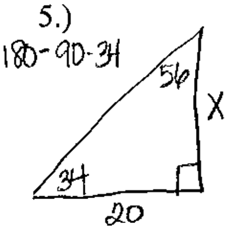
3

4.)

translation then rotation
(slide) (turn)

4

5.)




$\frac{20}{\sin 56} = \frac{X}{\sin 34}$

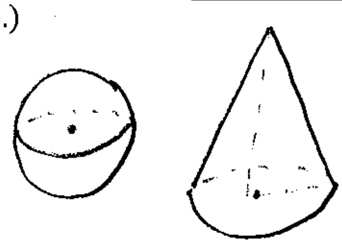
$\frac{X \sin 56}{\sin 56} = \frac{20 \sin 34}{\sin 56}$

$X = 13.4901$
7034

$\boxed{13.5}$

3

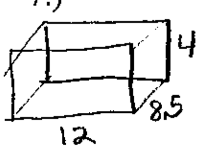
6.)



circle

2

7.)




$V = lwh$
$= (12)(8.5)(4)$
$= 408$

$408(.25) = \boxed{102}$

3

8.)

$\overline{CG} \cong \overline{FG}$
not true

1

9.)

$2x - y = 7$
$-2x \quad -2x$

$\frac{-y}{-1} = \frac{-2x}{-1} + \frac{7}{-1}$

$y = 2x - 7$
$m = 2$
$\boxed{\perp m = \frac{-1}{2}}$

$y = -\frac{1}{2}x + 6$

1

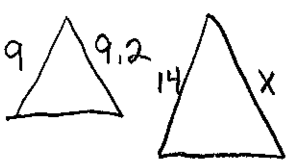
10.)

octagon

$\frac{360}{n} = \frac{360}{8} = 45°$

1

11.)




$\frac{9}{14} = \frac{9.2}{x}$

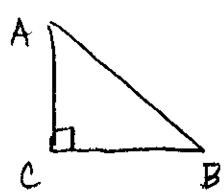
$\frac{9x}{9} = \frac{128.8}{9}$

$14.3\overline{1}$

$\boxed{14.3}$

3

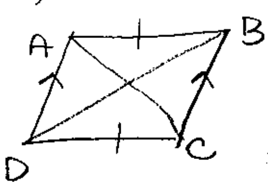
12.)




$\sin A = \cos B$

4

13.)




4

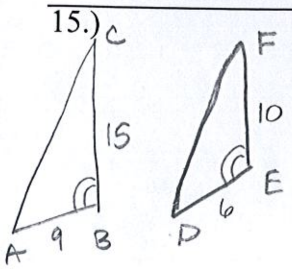
14.)

$x^2 + y^2 + 6y = 7$
$x^2 + y^2 + 6y + \underline{9} = 7 + \underline{9}$
$x^2 + (y+3)(y+3) = 16$
$x^2 + (y+3)^2 = 16$

$\boxed{C = (0,-3) \quad r = 4}$

2

15.)

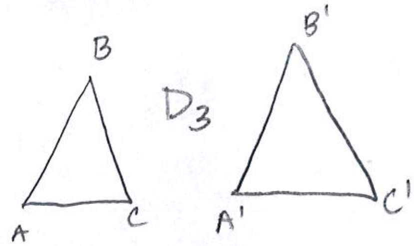



$\Delta ABC \sim \Delta DEF$

(SAS)

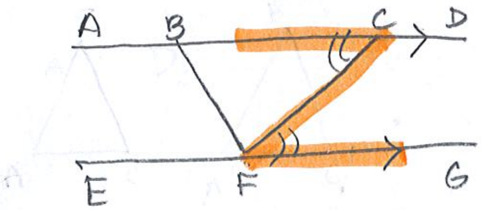
$\boxed{3}$

16.)




$\boxed{2}$

17.)




alternate interior

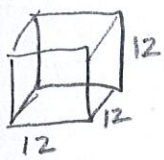
$\boxed{1}$

18.)

$$\frac{EC}{EA}$$

$\boxed{1}$

19.)




$SA = 6(lw)$

$= 6(12)(12)$

$= 864 \text{ ft.}^2$

$\frac{864}{450} =$

$1.92 \approx \boxed{2}$

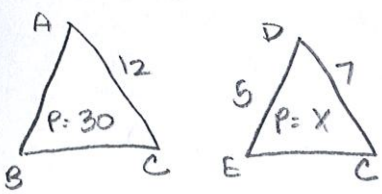
$\boxed{2}$

20.)

not true

$\boxed{1}$

21.)




$\frac{12}{30} = \frac{7}{X}$

$\frac{\cancel{12}X}{\cancel{12}} = \frac{210}{12}$

$\boxed{X = 17.5}$

$\boxed{4}$

22.)

$\frac{\cancel{3}y}{\cancel{3}} = \frac{-2x}{3} + \frac{8}{3}$

$y = \frac{-2}{3}x + \frac{8}{3}$

$\boxed{m = \frac{-2}{3}}$

$\cancel{2x} + 3y = 5$

$\cancel{-2x} \qquad -2x$

$\frac{\cancel{3}y}{\cancel{3}} = \frac{-2x}{3} + \frac{5}{3}$

$\boxed{m = \frac{-2}{3}}$

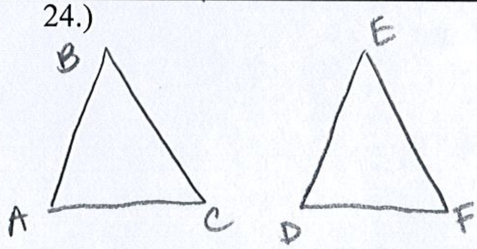
$\boxed{y = \frac{-2}{3}x + \frac{5}{3}}$

$\boxed{1}$

23.)

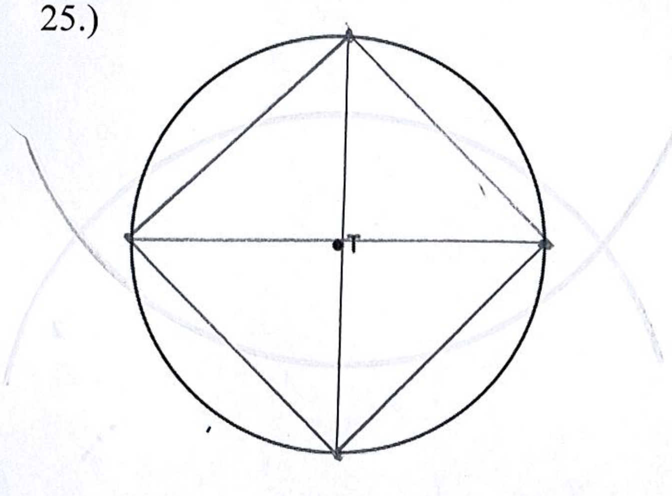
$\boxed{2}$

24.)



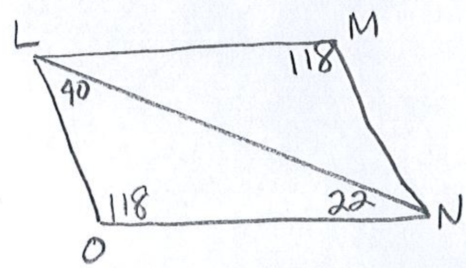

$\boxed{3}$

25.)




26.)

**Part II**




∠O is 118° b/c opposite ∠s are ≅ in a llgram.

In a Δ all ∠s add to 180° so 118 + 22 + 40 = 180°

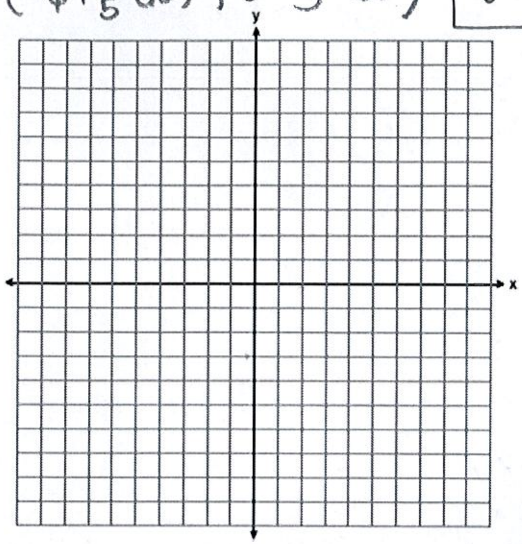
$2:3 = \frac{2}{5}$ $\left(x_1 + \text{frac}(x_2 - x_1),\ y_1 + \text{frac}(y_2 - y_1)\right)$

$A(-6,-5)$ $B(4,0)$

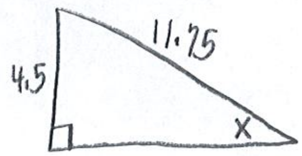
27.)

$\left(-6 + \frac{2}{5}(4 - -6),\ -5 + \frac{2}{5}(0 - -5)\right)$

$\left(-6 + \frac{2}{5}(10),\ -5 + \frac{2}{5}(5)\right)$ $\boxed{(-2,-3)}$




28.)




$\frac{4.5}{\sin X} = \frac{11.75}{\sin 90}$

$\frac{4.5 \sin 90}{11.75} = \frac{\cancel{11.75} \sin X}{\cancel{11.75}}$

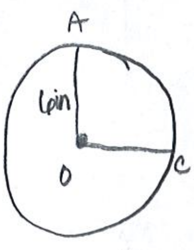
$\sin X = .3829787234$

$\boxed{\text{2nd sin}}$

$X = 22.51831413$

$\boxed{23^\circ}$

29.)




$A = \frac{n}{360} \pi r^2$ $\boxed{n = 120^\circ}$

$12\cancel{\pi} = \frac{n}{360} \cancel{\pi} (6)^2$

$\frac{12}{1} = \frac{36n}{360}$

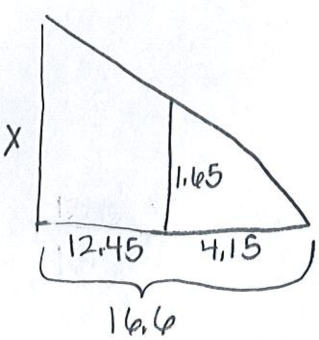
$12 = \frac{n}{360} \cdot 36$

$\frac{\cancel{36}n}{\cancel{36}} = \frac{4320}{36}$

30.)

$\triangle ABC \cong \triangle A'B'C'$ after a line reflection b/c a reflection is a rigid motion which does not effect size.

31.)




$16.6 - 12.45 =$
$4.15$

$\frac{X}{16.6} = \frac{1.65}{4.15}$

$\frac{\cancel{4.15} X}{\cancel{4.15}} = \frac{27.39}{4.15}$

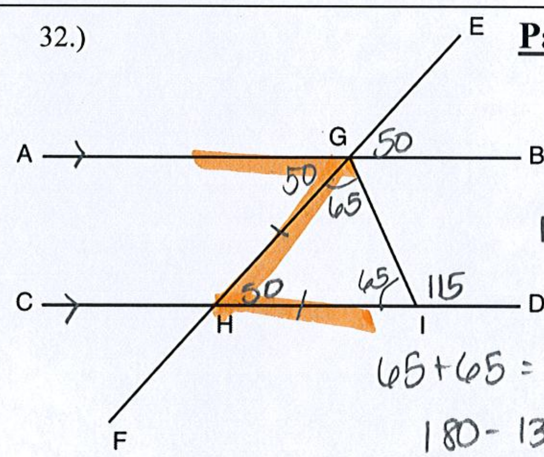
$\boxed{X = 6.6\text{m}}$

5) $\angle AGH$ ; $\angle GHF$ are $\cong$ and are alternate interior $\angle$s so

$\overline{AB} \parallel \overline{CD}$.

32.)

**Part III**




$180 - 115$

$65 + 65 = 130$

$180 - 130 = 50^\circ$

1) $\angle GIH = 65^\circ$ b/c linear prs. are supplementary

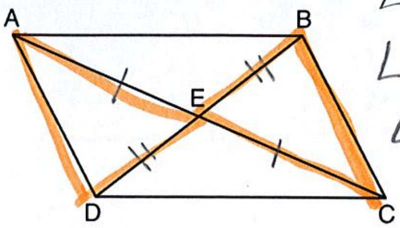
2) $\angle HGI = 65^\circ$ b/c base $\angle$s of an isosceles $\triangle$ are $\cong$.

3) $\angle GHI = 50^\circ$ b/c $\angle$s in a $\triangle$ add to $180^\circ$

4) $\angle AGH$ ; $\angle GHI$ both $= 50^\circ$

$\Delta AED \cong \Delta CEB$

33.)




$\angle A \to \angle C$

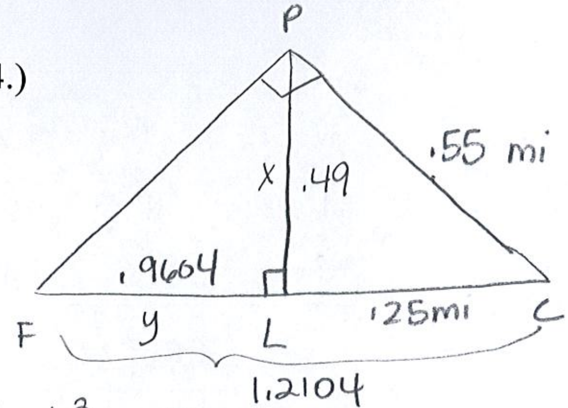
$\angle E \to \angle E$

$\angle D \to \angle B$

$\boxed{R_{180}}$

| Statement | Reason |
|---|---|
| ① ABCD is a ‖gram | ① Given |
| ② $\overline{AE} \cong \overline{CE}$ $\overline{DE} \cong \overline{BE}$ | ② In a ‖gram diagonals bisect each other |
| ③ $\angle AED \cong \angle BEC$ | ③ Vertical ∠s are ≅ |
| ④ $\Delta AED \cong \Delta BEC$ | ④ SAS ≅ SAS |

34.)




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

$x^2 + (.25)^2 = (.55)^2$

$x^2 + .0625 = .3025$

$-.0625 \quad -.0625$

$x^2 = .24$

$x = \sqrt{.24}$

$x = .4898979486$

$\boxed{= .49}$

$\frac{.49}{y} = \frac{.25}{.49}$

$\frac{.2401}{.25} = \frac{.25y}{.25}$

$y = .9604$

$+ .25$

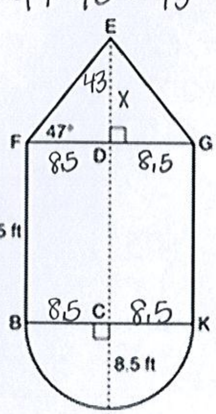
$\boxed{1.2104}$

No the distance between F & C is 1.2 miles

**Part IV**

35.)

$180 - 47 - 90 = 43$




$V_{cone} = \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi(8.5)^2(9.115134035)$

$\boxed{= 689.6512514}$ +

$V_{cylinder} = \pi r^2 h$

$= \pi(8.5)^2(25)$

$\boxed{= 5674.501731}$ +

$V_{\frac{1}{2}sphere} = \frac{\frac{4}{3}\pi r^3}{2}$

$= \frac{\frac{4}{3}\pi(8.5)^3}{2}$

$= \frac{2572.440785}{2}$

$\boxed{= 1286.220392}$

Total Volume $= 7650.373374$

$\boxed{7650}$

$\frac{X}{\sin 47} = \frac{8.5}{\sin 43}$

$\frac{X \sin 43}{\sin 43} = \frac{8.5 \sin 47}{\sin 43}$

$= 9.115134035$

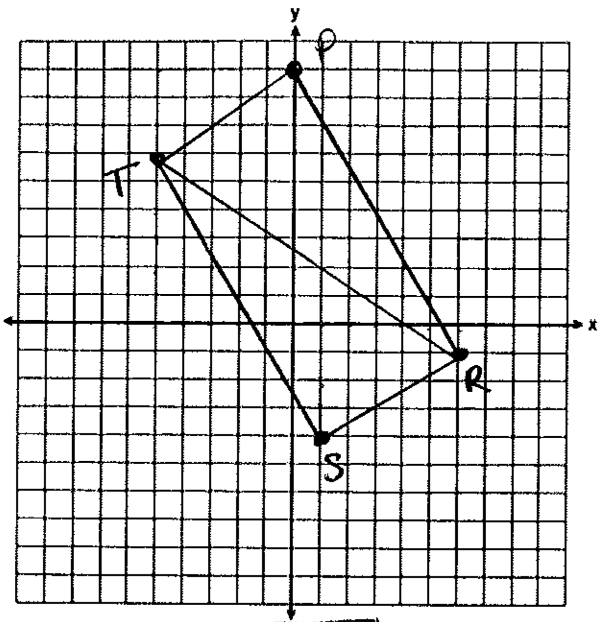
$7650(62.4) = 477,360$ pounds

$(.85)$

$= 405,756$ pounds

No, 405,765 pounds exceeds the weight limit of 400,000

36.) $\Delta RST \quad R(6,-1)\ S(1,-4)\ T(-5,6)$




$\boxed{P(0,9)}$

$RS = \frac{-4-1}{1-6} = \frac{-3}{-5} = \boxed{\frac{3}{5}}$

$ST = \frac{6--4}{-5-1} = \frac{10}{-6} = \boxed{\frac{-5}{3}}$

$RT = \frac{6--1}{-5-6} = \frac{7}{-11}$

$\Delta RST$ is a right $\Delta$ b/c one pair consecutive sides have negative reciprocal slopes making them $\perp$.

$mRS = \boxed{\frac{3}{5}}$

$mST = \boxed{\frac{-5}{3}}$

$mTP = \frac{9-6}{0--5} = \boxed{\frac{3}{5}}$

$mRP = \frac{9--1}{0-6} = \frac{10}{-6} = \boxed{\frac{-5}{3}}$

RSTP is a rectangle b/c consecutive sides have negative reciprocal slopes making them $\perp$.