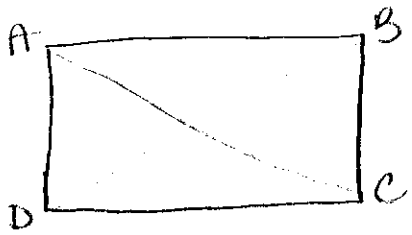
Geometry Review
August 2015

Name Key
Date: _____ Period: _____

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

1.)



$\overline{AC} \cong \overline{BD}$

2

2.)

dilation - not a rigid motion

3

3.)

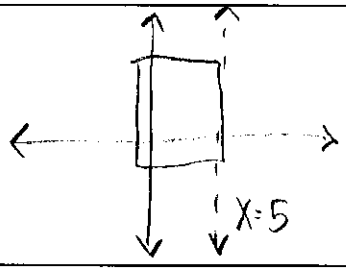
4

4.)

$\sin X = \cos(90 - X)$

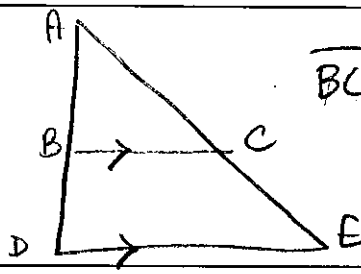
1

5.)



1

6.)



$\overline{BC} \cong \overline{DE}$

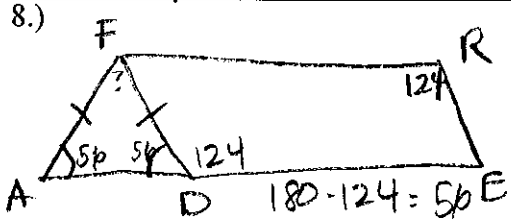
4

7.)

r x-axis → rotation

1

8.)



56(2) = 112
180 - 112
68°

3

9.) $x^2+4x+4+y^2-6y+9 = 12+4+9$

$(x+2)^2+(y-3)^2 = 25$

$r = \sqrt{25} = 5$

3

10.) P(6,1)

$m = \frac{-5-1}{3-6} = \frac{-6}{9} = -\frac{2}{3}$

$y = mx+b$

$1 = (-\frac{2}{3})(6)+b$

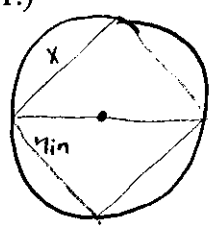
$1 = -4+b$

$b = 5$

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

1

11.)



$x^2+x^2 = 7^2$

$2x^2 = 49$

$x^2 = 24.5$

$\sqrt{x} = 4.949747468$

4.9

2

12.)

$\frac{4}{10} = \frac{5}{x}$

$4x = 50$

$x = 12.5$

$\triangle AOB \sim \triangle PCB$

3

13.)

Rotation (turn)

2

14.)

$\frac{\angle B}{\angle E} = \frac{\angle C}{\angle F}$

4

15.) $\angle ADC = 180 - 72 = \boxed{108°}$

3

16.) $r = \frac{10}{2} = 5$

$V = \frac{\frac{4}{3}\pi r^3}{2} = \frac{\frac{4}{3}\pi(5)^3}{2} = \frac{523.5987756}{2} = 261.7993878$ (62.4)

16,336.2818 → 16,336

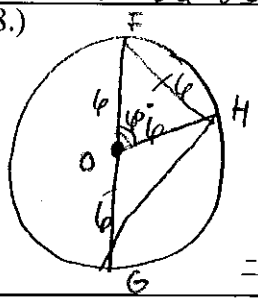
1

17.) $\frac{2}{6} \times \frac{5}{15}$

$30 = 30$ ✓

4

18.)



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

$= \frac{60}{360}\pi(6)^2$

$= \boxed{6\pi}$

3

19.) $\triangle AEC \sim \triangle BED$

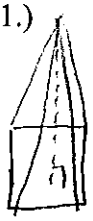
$\frac{AE}{BE} = \frac{AC}{BD}$

2

20.) $3^2 = 9$

1

21.)



$V = \frac{1}{3}lwh$

$2592.276 = \frac{1}{3}lw(146.5)$

$\frac{2,592.276}{(\frac{1}{3})(146.5)} = lw$

$\sqrt{x^2} = \sqrt{53084.15017}$ → 230

4

22.) A (-3,1) B (0,3) C (5,2) D (-1,-2)

$\overline{AB} = \frac{3-1}{0-3} = \boxed{\frac{2}{3}}$ $\overline{CD} = \frac{-2-2}{-1-5} = \frac{4}{6} = \boxed{\frac{2}{3}}$ 1 pr. ll sides

$BC = \frac{2-3}{5-0} = \boxed{\frac{-1}{5}}$ $AD = \frac{-2-1}{-1-3} = \boxed{\frac{-3}{2}}$

4

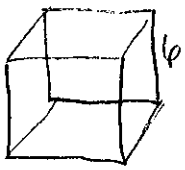
23.) $\frac{4}{6} = \boxed{\frac{2}{3}}$

1

→ 24.) $y = 3x - 1$

4

25.) $m = 137.8$



$V = lwh$

$= (6)(6)(6)$

$= 216$

$d = \frac{m}{V}$

$d = \frac{137.8}{216}$

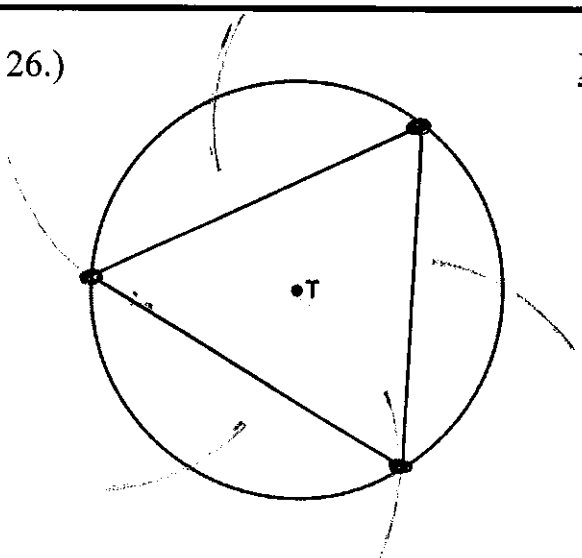
$d = .6379268963$

$d = .638$

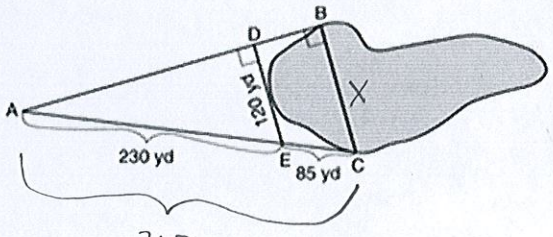
Ash

26.)

Part II



27.)



315

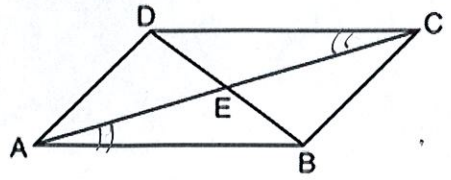
$\frac{230}{120} = \frac{315}{X}$

$\frac{280X}{230} = \frac{37,800}{230}$

$X = 164.34782601$

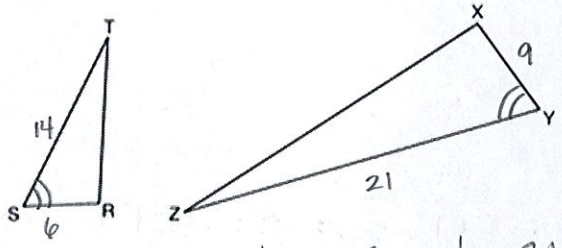
164 yds

28.)



Statement	Reason
① ll gram ABCD	① Given
② $\overline{CD} \parallel \overline{AB}$	② In a llgram, opposite sides are ll.
③ $\angle DCA \cong \angle BAC$	③ When 2 ll lines are cut by a transversal, alternate interior $\angle$s are $\cong$.

29.)



$\frac{6}{9} = \frac{14}{21} = \frac{\cdot 6}{\cdot 6}$

The $\triangle$s are $\sim$ by SAS b/c 2 prs. corresponding sides are proportional & the corresponding $\angle$s in-between are $\cong$.

30.)

$\triangle ABC \cong \triangle XYZ$ b/c $\triangle ABC$ rotated to $\triangle XYZ$. A rotation is a rigid motion which does not change size, so $\triangle ABC \cong \triangle XYZ$.

$\angle A \to \angle X$
$\angle B \to \angle Y$
$\angle C \to \angle Z$

31.)

D(1,4) F(16,14) 2:3 → $\frac{2}{5}$

$(x_1 + \text{frac}(x_2 - x_1), y_1 + \text{frac}(y_2 - y_1))$

$(1 + \frac{2}{5}(16-1), 4 + \frac{2}{5}(14-4))$

$(1 + \frac{2}{5}(15), 4 + \frac{2}{5}(10))$

$(1+6, 4+4)$

(7,8)

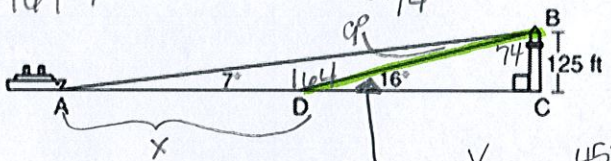
32.)

Part III

180-164-7

180-90-16 = 74

180-16



$\frac{y}{\sin 90} = \frac{125}{\sin 16}$

$y \sin 16 = 125 \sin 90$

$\frac{y \sin 16}{\sin 16} = \frac{125 \sin 90}{\sin 16}$

$y = 453.4944098$

$\frac{X}{\sin 9} = \frac{453.4944098}{\sin 7}$

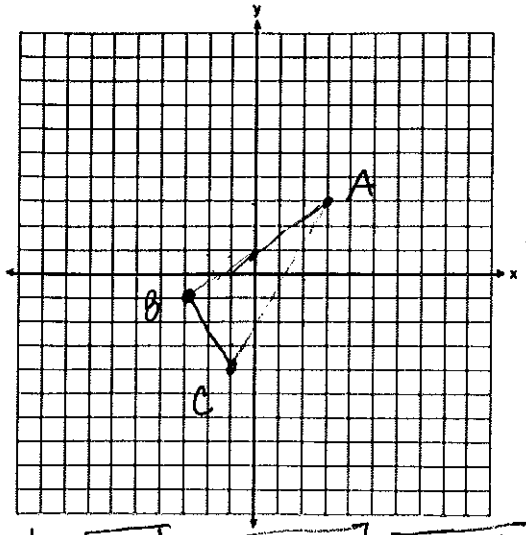
$\frac{X \sin 7}{\sin 7} = \frac{453.4944098 \sin 9}{\sin 7}$

$X = 582.116498$

582 ft.

A(X,3) B(-3,-1) C(-1,-4)

33.)

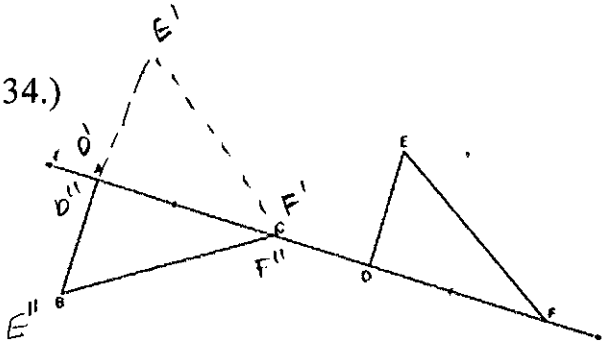


$m_{BC} = \frac{-4-1}{-1-3} = \frac{-3}{2}$ $\perp m = \frac{2}{3}$ A(3,3) or (9.5,3)

$m_{AB} = \frac{3-1}{3-3} = \frac{4}{6} = \frac{2}{3}$ $m_{AC} = \frac{3-4}{3-1} = \frac{7}{4}$

$\triangle ABC$ is a right $\triangle$ b/c 2 consecutive sides have negative reciprocal slopes making them $\perp$.

34.)

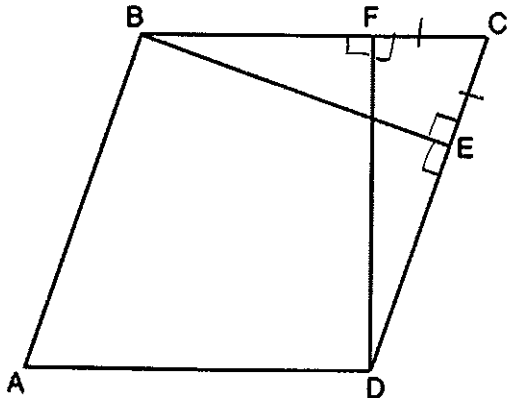


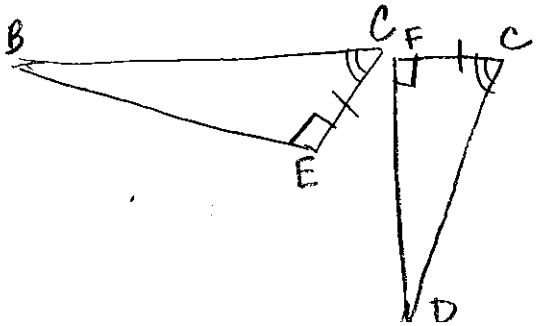
F' will be located at C after a translation because $\overline{AC}$ & $\overline{DF}$ are the same length and when D' goes to A, then F' has to go to C.

$\triangle DEF \cong \triangle ABC$ b/c $\overline{AC} \cong \overline{DF}$ and if E'' maps to B then $\overline{AB} \cong \overline{DE}$ and since a reflection is a rigid motion & doesn't affect size, the $\triangle$s have to be $\cong$.

Part IV

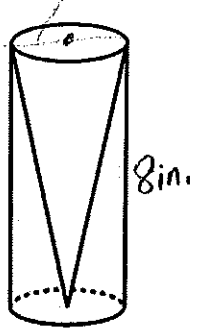
35.)





statement	reason
① ||gram ABCD $\overline{BE} \perp \overline{CED}$ $\overline{DF} \perp \overline{BFC}$ $\overline{CE} \cong \overline{CF}$	① Given
② $\angle CEB$, $\angle CFD$ are right $\angle$s	② $\perp$ lines form right $\angle$s.
③ $\angle CEB \cong \angle CFD$	③ All right $\angle$s are $\cong$
④ $\angle C \cong \angle C$	④ Reflexive
⑤ $\triangle CEB \cong \triangle CFD$	⑤ ASA $\cong$ ASA
⑥ $\overline{BC} \cong \overline{CD}$	⑥ corresponding parts of $\cong$ $\triangle$s are $\cong$.
⑦ ||gram ABCD is a rhombus.	⑦ consecutive sides of a rhombus are $\cong$.

36.)



$r = \frac{3}{2} = 1.5$ inches

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

$= \frac{1}{3}\pi(1.5)^2(8)$

$= 18.84955592(100)$

$= 1884.955592$

$= 1885$ inches

100 candles

$1885(.52) = 980.2(.10) = \$98.02$

molds	\$ 37.83
wax	\$ 98.02
	135.85

Profit $1.95(100)$

\$195.00

$-\ 135.85$

\$59.15