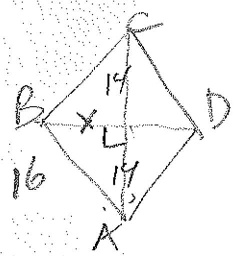
5. In rhombus ABCD, $AB = 16$ and $AC = 28$. Find the area of the rhombus to the nearest tenth.



$14^2 + x^2 = 16^2$

$x^2 = 256 - 196$

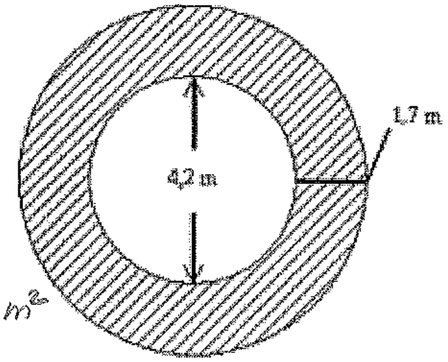
$x^2 = 60$

$x = \sqrt{60}$

$A = \frac{1}{2}(28)(2\sqrt{60})$

$= 216.9$ units^2

6. The figure below is an overhead view of a deck surrounding a hot tub.
What is the area of the deck to the nearest tenth?



$r_1 = 2.1$

$r_2 = 2.1 + 1.7 = 3.8$

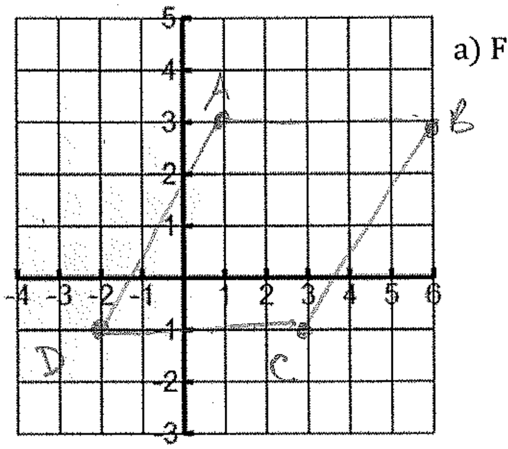
$A_1 = \pi(2.1)^2 = 4.41\pi$

$A_2 = \pi(3.8)^2 = 14.44\pi$

$A_2 - A_1 = 10.03\pi \approx 31.5\ m^2$

7. Given A(1, 3) B (6, 3) C (3, -1) D (-2, -1).

Plot the points on the grid provided. Label your points, including coordinates.



a) Find the slopes of the segments (in the subscripts). Show your work.

$m_{AB} = 0$

$m_{BC} = \frac{4}{3}$

$m_{CD} = 0$

$m_{DA} = \frac{4}{3}$

Section 5 #7 slopes of BC & DA are 4/3 (Ans Key)

b) Find the length of the segments indicated. Show your calculations.

AB= 5

BC= $\sqrt{3^2 + 4^2} = \sqrt{25} = 5$

CD= 5

AD= 5

c) ABCD is a quadrilateral. How would you classify it? (What name would you give it?) Be as exact as you can.

rhombus

d) Find the Area of quadrilateral ABCD $A = bh = 5(4) = 20$ units^2

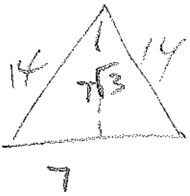
8. Each of the following triples represents sides of a triangle. Determine whether the triangle is right, acute or obtuse.

a. 14, 48, 50 $50^2 \, ? \, 14^2 + 48^2$ $2500 = 2500$ right

b. 4, 8, 9 $9^2 \, ? \, 4^2 + 8^2$ $81 > 80$ obtuse

c. 2√3, 4, 6 $6^2 \, ? \, (2\sqrt{3})^2 + 4^2$ $36 > 28$ obtuse

9. Determine the area of an equilateral triangle whose side length is 14 in. Leave answer in simplified square roots if necessary.



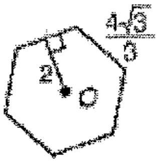
$A = \frac{1}{2}bh = \frac{1}{2}(14)(7\sqrt{3}) = 49\sqrt{3}\ in^2$

10. A regular hexagon has an apothem of 2cm and a side length of $\frac{4\sqrt{3}}{3}$ cm. Determine its area exactly.

$A = \frac{1}{2}ap$ $p = 6\left(\frac{4\sqrt{3}}{3}\right) = 8\sqrt{3}$

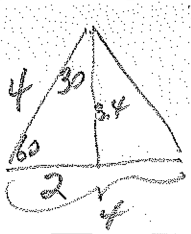
$= \frac{1}{2}(2)(8\sqrt{3})$

$= 8\sqrt{3}\ cm^2$

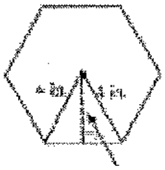


11. What is the perimeter of the regular hexagon to the nearest inch? (Radius is 4 in, apothem is 3.4 in)

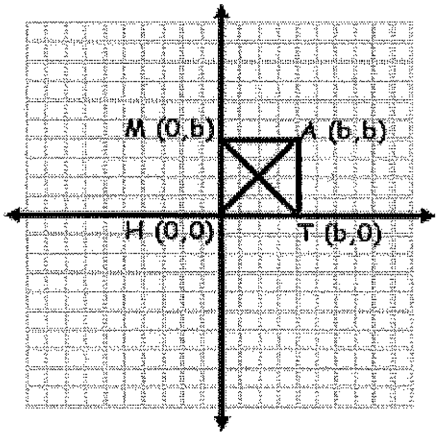
$P = 4(6) = 24\,in$



$\frac{360}{6} = 60$



M(0,b) MATH is a square with diagonals $\overline{AH}$ and $\overline{MT}$. Use distance, slope and/or midpoint formulas to prove each statement: Show all work



12. Diagonals are congruent.

distance

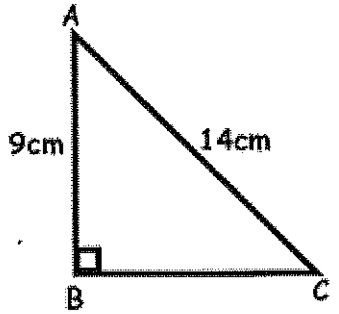
13. Diagonals bisect each other.

midpoint

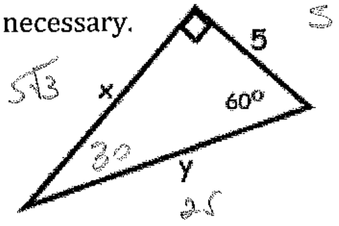
14. Diagonals are perpendicular to each other.

slope

15. In the triangle below, find BC when AB = 9cm and AC = 14. Leave answer to the nearest tenth.



16. In the triangle below, find x and y. Leave answers as simplified square roots when necessary.



$S = 5$

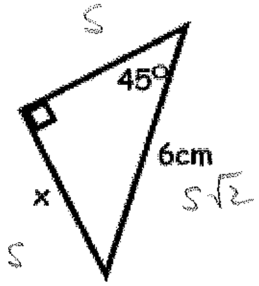
$x = 5\sqrt{3}$

$y = 2(5) = 10$

Ⓡ 17. Find x. Leave answers as simplified square roots when necessary.

$S\sqrt{2} = 6$

$S = \frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$



ANSWER KEY SAYS 24

* 18. A kite needs a vertical and a horizontal support bar attached at opposite corners. The upper edges of the kite are 7 inches, the side edges are x inches and the vertical support bar is $(x + 1)$ inches. What is the measure of the vertical support bar in inches?

$x^2 + 7^2 = (x+1)^2$

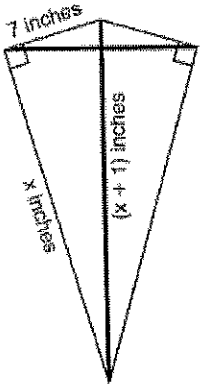
$x^2 + 49 = x^2 + 2x + 1$

$48 = 2x$

$24 = x$

$x + 1 = 25$

$\boxed{25 \text{ in.}}$



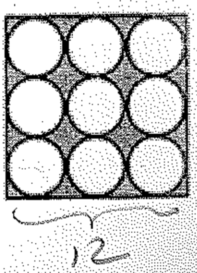
19. In the figure, each circle has a radius of 2 inches. What is the area of the shaded region rounded to the nearest hundredth?

$A_S = (12)(12) = 144$

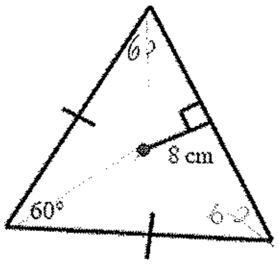
$A_C = \pi 2^2 = 4\pi$

$9A_C = 36\pi$

$A_{shade} = 144 - 36\pi = 39.90 \text{ in}^2$

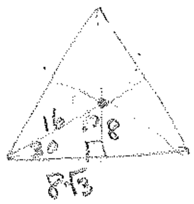


20. Find the area of the triangle if the length of the apothem is 8 cm.



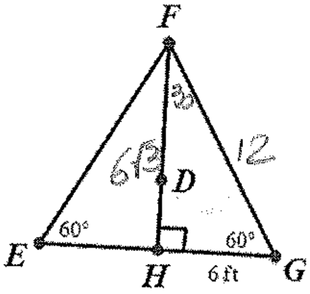
$h = (16+8) = 24$

$b = 2(8\sqrt{3}) = 16\sqrt{3}$



$A = \frac{1}{2}(16\sqrt{3})(24) = 192\sqrt{3}\ cm^2$

21. Find the area of the triangle if ~~HW~~ HG=6 ft and $\overline{DH}$ is the apothem.



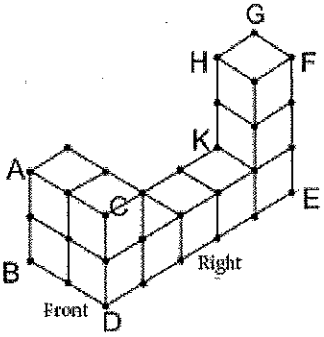
$h = 6\sqrt{3}$

$b = 12$

$A = \frac{1}{2}(12)(6\sqrt{3}) = 36\sqrt{3}\ ft^2$

Part 6

Use the diagram to answer the questions #1-5:



1) Name 2 pairs of skew lines $\overleftrightarrow{AC}$ & $\overleftrightarrow{EF}$
$\overleftrightarrow{CD}$ & $\overleftrightarrow{GH}$

2) Name a plane that is perpendicular to line DE plane ABC

3) Name 2 pairs of parallel planes plane ABC || plane EFG
plane CDE || plane ABH

Part 7- Surface Area and Volume

Determine the surface area and volume of a right prism with the given base shape, base dimensions, and prism height, h. Round to the nearest tenth, if necessary.

$SA = L + 2B$ $SA = hP + 2B$
$V = Bh$

1. Square base whose side measures 3 meters; h = 14 meters

____

2. Regular hexagon base whose sides measure 10 cm; h = 4 cm

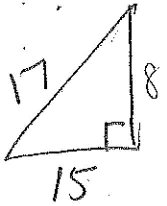
____

3. Equilateral triangle base whose sides measure 6 inches; h = 8 in

____

4. A right triangle base whose hypotenuse is 17in and one leg is 15 in; h = 5 in

$P = 40$



$15^2 + x^2 = 17^2$

$x^2 = 64$

$x = 8$

$B = \frac{1}{2}(15)(8) = 60$

$SA = hp + 2B$

$= 5(40) + 2(60)$

$= 320 \text{ in}^2$

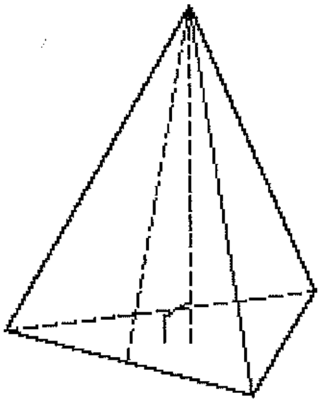
$V = Bh$

$= 60(5) = 300 \text{ in}^3$

____

Use the pyramid at the right. The base of the pyramid is an equilateral triangle whose perimeter is 120 in. The volume of the pyramid is 3464.1 in³.

$SA = L + B$ $\quad SA = \frac{1}{2}\ell p + B$ $\quad V = \frac{1}{3}Bh$



5. Determine the length of a side of the base ______________

6. Determine the area of the base of the pyramid ______________

7. Determine the height of the pyramid ______________

8. The apothem of the triangular base is 11.547 in. Determine the slant height of the pyramid.

____

9. Determine the total surface area

____

$SA = L + 2B \quad SA = 2\pi r h + 2\pi r^2 \quad V = Bh = \pi r^2 h$

Determine the unknown value for a right cylinder with the given radius, r, height, h, surface area SA, and volume, V.

10. r = 26', h = 16' SA = __________

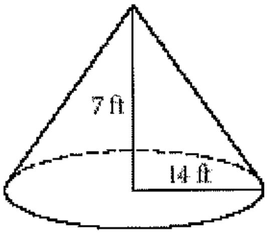
11. SA= 98 in², h = 14 in, r = __________

12. V = 144 cm³, r = 12 cm h = __________

13. V = 80 in³, h = 16 in r = __________

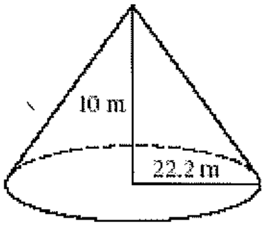
Determine the surface area of each right cone. $SA = L + B \quad SA = \pi r l + \pi r^2$

14.



____

15.



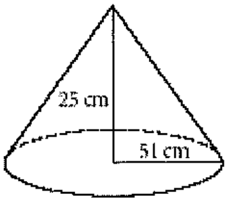
____

16. A right cone has a surface area of 152π square meters. The radius is 8 meters. Determine the slant height.

____

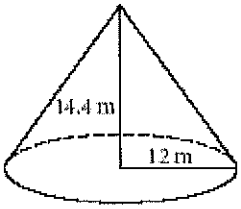
Determine the volume of each right ~~cylinder~~ cone. $V = \frac{1}{3}Bh \quad V = \frac{1}{3}\pi r^2 h$

17.



____

18.



____

19. The volume of a right cone is 27π cubic inches. The height is the same as the radius. Determine the surface area of the cone to the nearest hundredth.

____

20. Determine the surface area of a sphere with a diameter of 4". Leave answer in terms of π.

$SA = 4\pi r^2$

____

21. Determine the length of a radius if the surface area of a sphere is 36π cm².

____

22. Determine the volume of a sphere with a radius of 14 cm.

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

____

23. Determine the volume of a sphere if the surface area is 100 cm².

____

24. Determine the volume of a sphere if the surface area is 100π cm²

____

Cone: $SA = \pi r l + \pi r^2$ $V: \frac{1}{3}\pi r^2 h$

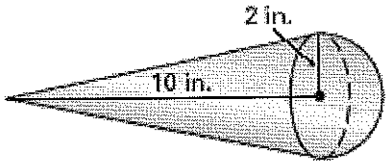
Pyramid: $SA = \frac{1}{2}lp + B$

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

Determine the surface area and volume of each composite.

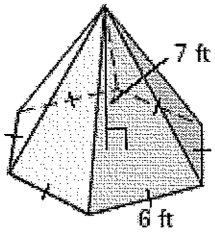
Sphere: $SA = 4\pi r^2$ $V = \frac{4}{3}\pi r^3$

25.



Cone

26.



SA = ____________________

Volume = ________________

SA = ___________________

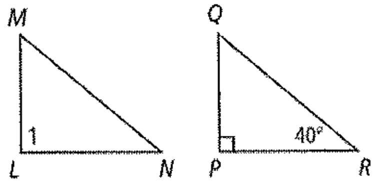
Volume = _______________

Part 8

Multiple-Choice

_____ 1. The pair of polygons below are similar. Determine the measure of angle 1.

[✓ a. 90°]   b. 40°   c. 50°   d. 95°



X ? _______ 2. Which of the following theorems/postulates is NOT a way to determine if triangles are similar?

a. SAS   b. ASA   c. AA   ? [✓ d. ~~SAA~~ SSA]

_____ 3. On a map of Florida, one-fourth of an inch represents 10 miles. If it is approximately 2 inches from Orlando to Ocala on the map, what is the actual distance in miles?

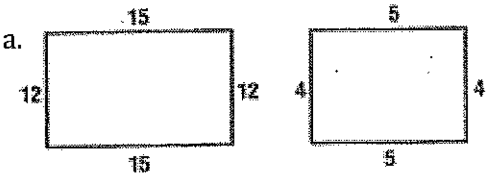
a. 16   b. 64   [✓ c. 80]   d. 20

$\frac{.25}{10} = \frac{2}{x}$ $.25x = 20$

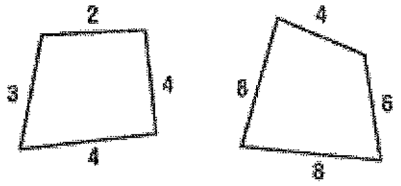
$x = 80$

____ 4. Which pair of polygons are definitely **not** similar?

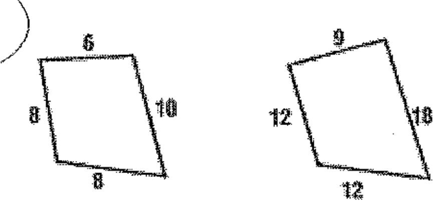
a.


15
12
12
15
5
4
4
5

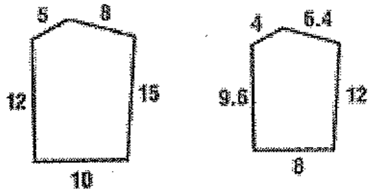
b.



[✓ c.]

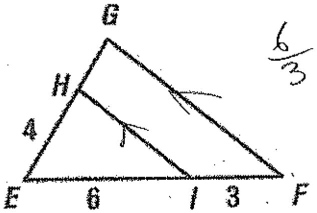

6
8
10
8
9
12
18
12

d.


5
8
12
15
10
4
6.4
9.6
12
8

____ 5. Given ΔEGF with $\overline{HI} \parallel \overline{GF}$, EI = 6, IF = 3, and EH = 4, find HG.

[✓ a. 2] b. 3 c. 6 d. 10



$\frac{6}{3} = \frac{4}{x}$

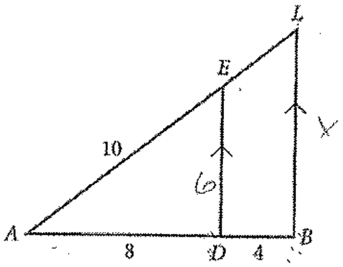
$6x = 12$

$x = 2$

____ 6. Which proportion illustrates the Side-Splitting Theorem?

a. $\frac{AD}{AB} = \frac{AL}{AE}$ b. $\frac{AD}{EL} = \frac{AB}{AL}$

c. $\frac{AD}{AE} = \frac{AL}{AB}$ [✓ d. $\frac{AD}{DB} = \frac{AE}{EL}$]


L
E
10
6
x
A
8
D
4
B

____ 7. In ΔADE, if ED = 6 what is BL?

a. 3 b. 5 [✓ c. 9] d. 12

$\frac{8}{6} = \frac{12}{x}$

$8x = 72$

$x = 9$

____ 8. The perimeter of ΔGHI is 18, the perimeter of ΔPQR is 30, and ΔGHI~ΔPQR. If GH is 10, what is PQ?

a. 3.6 b. 6 [✓ c. 16.67] d. 27.78

$\frac{18}{30} = \frac{10}{x}$

$18x = 300$

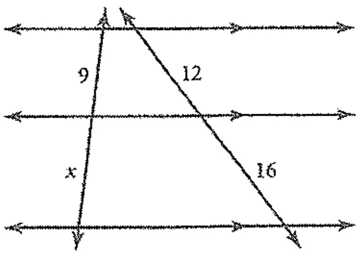
$x = 16.67$

____ 9. Suppose ΔABC is similar to a triangle whose sides have lengths 3, 7, and 6. Which of the following could be the perimeter of ΔABC?

a. 8 b. 16 c. 32 [✓ d. any of these]

____ 10. What is the value of x in the figure at the right?

a. 8 [✓ b. 12] c. 14 d. 16



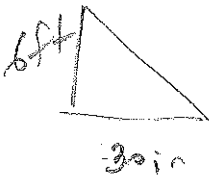
$\frac{9}{x} = \frac{12}{16}$

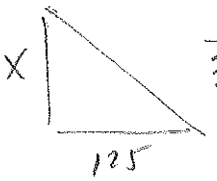
$12x = 144$

$x = 12$

_____ 11. The shadow of a man 6 feet tall is 30 inches long. At the same time of day, a building casts a shadow 125 inches long. How tall is the building?

a. 15 ft [✓ b. 25 ft] c. 30 ft d. 50 ft





$\frac{6}{30} = \frac{x}{125}$

$30x = 750$

$x = 25$

_____ 12. It costs $144 to refinish a floor that is 9 feet by 12 feet. At the same rate, how much will it cost to refinish a floor that is 12 feet by 16 feet?

a. $81 b. $108 [✓ c. $256] d. $576

$\frac{144}{108} = \frac{x}{192}$

$108x = 27648$

$x = 256$

_____ 13. Two spheres have radii of 3 cm and 5 cm. What is the ratio between the areas of their great circles?

a. 3:5 b. 6:10 [✓ c. 9:25] d. 27: 125

L $\frac{3}{5}$

A $\frac{9}{25}$

V

_____ 14. The area of one side of a cube is 36 ft². If the edges of the cube are tripled, what is the volume of the new cube?

a. 36 ft³ b. 196 ft³ c. 324 ft³ [✓ d. 5832 ft³]

$A = 36$

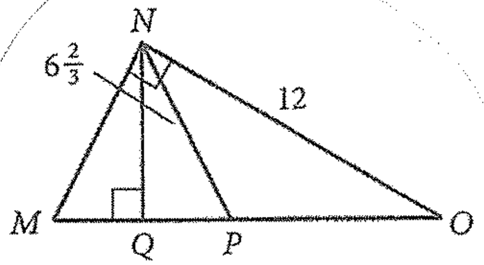
$s = 6$

$3s = 18$

$V = 18^3$

_____ 15. In the figure at the right, ΔMNO~ΔHIJ. What is the length of $\overline{NQ}$?

[✓ a. 6] b. 10 c. 12 d. 15



$\frac{12}{18} = \frac{NQ}{9}$

$NQ = 6$

_____ 16. MN =

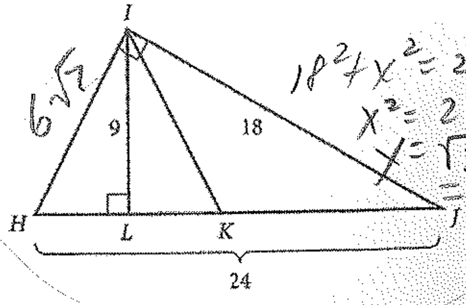
a. $6\sqrt{7}$ [✓ b. $4\sqrt{7}$] c. $4\sqrt{3}$ d. $6\sqrt{3}$

$\frac{12}{18} = \frac{x}{6\sqrt{7}}$ $18x = 72\sqrt{7}$

$x = 4\sqrt{7}$

_____ 17. What is the length of $\overline{IK}$?

a. 9 [✓ b. 10] c. 12 d. 15



$18^2 + x^2 = 24^2$

$x^2 = 252$

$x = \sqrt{252}$

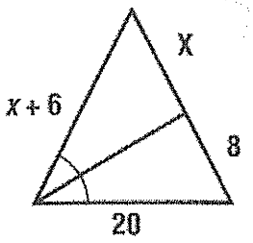
$= 6\sqrt{7}$

$\frac{6\frac{2}{3}}{x} = \frac{12}{18}$ $12x = 120$

$x = 10$

_____ 18. For the figure at the right, find the value of x.

a. 3 [✓ b. 4] c. 5 d. 6



$\frac{x+6}{x} = \frac{20}{8}$

$8x + 48 = 20x$

$48 = 12x$

$x = 4$

_____ 19. Which polygon is similar to other polygons of its classification?

a. rectangle

b. rhombus

[✓ c. regular octagon]

d. isosceles triangle

_____ 20. The measures of the angles of a triangle are in the extended ratio 2:4:9. Which is a measure of one of the angles?

a. 12 b. 36 [✓ c. 48] d. 105

$2x + 4x + 9x = 180$

$15x = 180$

$x = 12$

24, 48, 108

Complete each statement with the word ***always, sometimes,*** *or* ***never.***

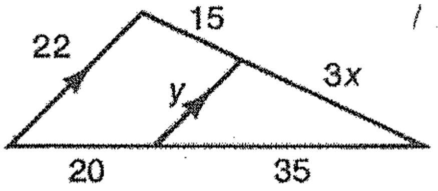
21. Two equilateral triangles are always similar.

22. Two similar triangles are sometimes congruent.

23. Two congruent triangles are always similar.

24. Two isosceles right triangles are always similar.

25. Find the values of x and y.



$x =$ 8.75

$y =$ 14

$\frac{3x}{15} = \frac{35}{20}$

$60x = 525$

$x = 8.75$

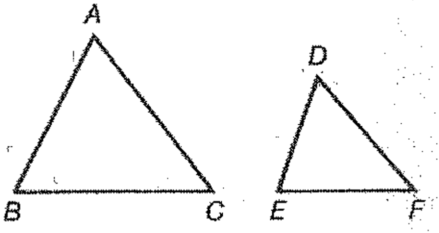
$\frac{35}{y} = \frac{55}{22}$

$55y = 770$

$y = 14$

26. Using the given information, tell which triangles are similar. The diagram is not drawn to scale.

a. $\frac{AB}{DF} = \frac{AC}{DE}$; $\measuredangle A \cong \measuredangle D$ ΔABC ~ ΔDFE or Δ BAC ~ ΔFDE



ABC FDE

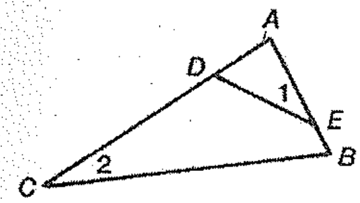
b. $\frac{AB}{FD} = \frac{BC}{DE} = \frac{AC}{FE}$ ΔABC ~ ΔFDE

c. $\measuredangle A \cong \measuredangle E$; $\measuredangle B \cong \measuredangle F$ ΔABC ~ ΔEFD

d. $AB = AC$; $DE = DF$; $\measuredangle A \cong \measuredangle D$ ΔABC ~ ΔDEF

27. Given: $\measuredangle 1 \cong \measuredangle 2$

Prove: $\frac{AD}{AB} = \frac{AE}{AC}$



Statements	Reasons

Part 9:

Given ⊙Q, m∡ABC=72° and m$\overparen{CD}$ = 46°. $\overline{BD}$ is a diameter. Find the indicated measures.

1. $m\overparen{CA}$= 144

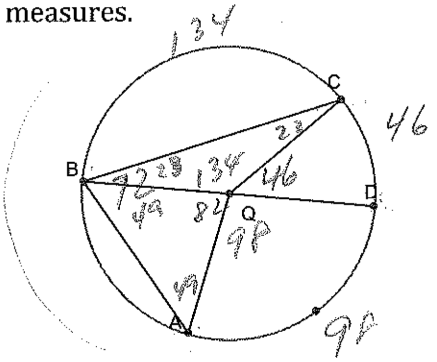
2. $m\overparen{BC}$ = 134

3. $m\overparen{AD}$= 98

4. $m\angle C$ = 23

5. $m\angle ABD$ = 49

6. $m\angle A$ = 49



In the circle to the right, $m\angle CAE = 60^\circ$, $m\overparen{BC} = (10x-36)^\circ$, $m\overparen{BA} = (8x)^\circ$, $m\overparen{AE} = (4x+12)^\circ$, and $\overline{DE} \cong \overline{DC}$.
Find each of the following measures:

$4x+12+8x+10x-36+120=360$

$22x=264$

$x=12$

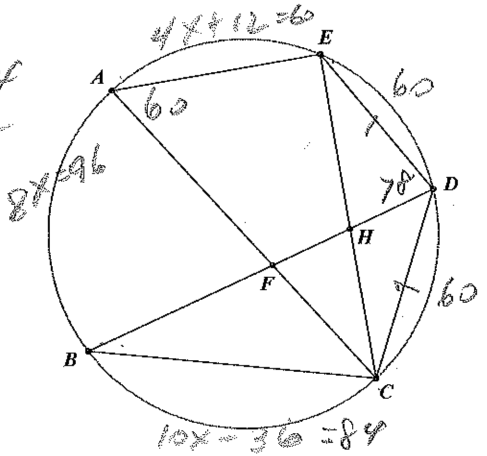
7. x = 12

8. $m\angle BDE$ = 78

9. $m\overparen{ECA}$ = 300

10. $m\overparen{CD}$ = 60

11. $m\angle BFC$ = $\frac{60+60+84}{2}$ = 102



12. If the length of an arc on a circle is 26 cm and the radius of that circle is 10 cm, what is the degree measure of the arc? Leave your answer in exact, simplified terms.

$\frac{L}{2\pi r} = \frac{M}{360}$ $\frac{26}{2\pi(10)} = \frac{M}{360}$ $20\pi M = 9360$

$M = \frac{9360}{20\pi} = \left(\frac{468}{\pi}\right)^\circ$

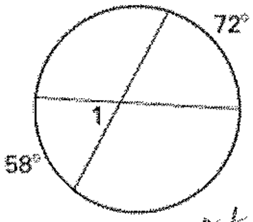
13. If the radius of a circle is 22 mm and the degree measure of one of the arcs on the circle is 160°, find the length of the arc.

$\frac{160}{360} = \frac{L}{2\pi(22)}$ $360L = 7040\pi$

$L = \frac{704\cancel{0}\pi}{36\cancel{0}} = \frac{176\pi}{9}$ mm

For each of the following problems, find the m∡1.

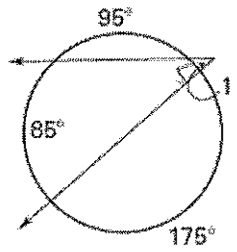
14.



$\frac{58+72}{2}$

65°

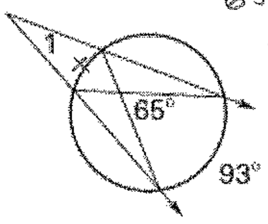
15.



$\frac{1}{2}(85-5)$

40°

16.

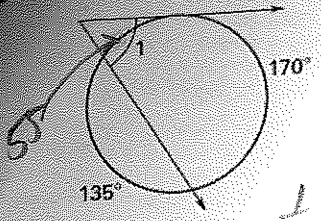


$65 = \frac{1}{2}(x+93)$

$x = 37$

$m\angle 1 = \frac{93-37}{2} = 28$

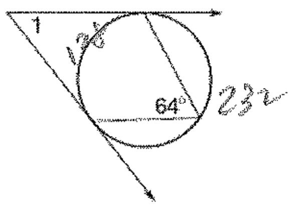
17.



$\frac{1}{2}(170-55)$

57.5

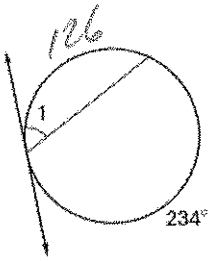
18.



$\frac{1}{2}(232-128)$

52

19.

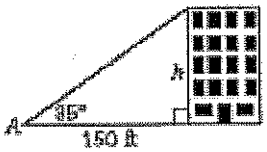


$m\angle 1 = \frac{126}{2} = 63°$

Part 10

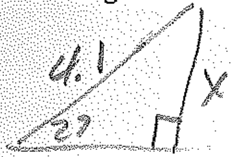
1. Determine the height of the building, to the nearest tenth, when ∡A = 35°

$\tan 35 = \frac{h}{150}$ $h = 105.0$ ft



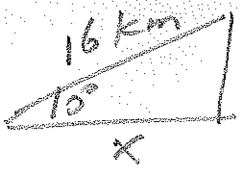
2. A slide 4.1 m long makes an angle of 27° with the ground. How high is the top of the slide above the ground? Round your answer to the nearest tenth.

$\sin 27 = \frac{x}{4.1}$



$x = 1.9$ m

3. Tom drives 16 km up a hill that is at a grade of 10°. What horizontal distance, to the nearest tenth of a kilometer, has he covered?



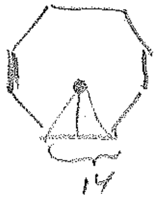
$\cos 10 = \frac{x}{16}$

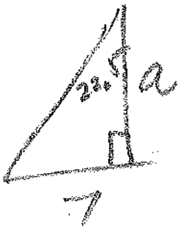
$x = 15.8$ km

4. Find the area of an octagon whose side length is 14 in.

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

$= 946.3717\ in^2$





$\tan 22.5 = \frac{7}{a}$

$a = 16.89949494$

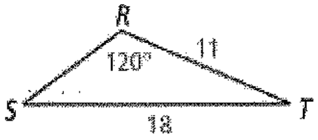
$p = 112$

5. In triangle RST, what is the measure of angle S to the nearest tenth?

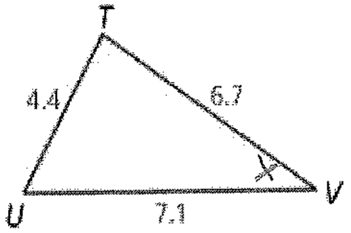
$\frac{\sin x}{11} = \frac{\sin 120}{18}$

$\frac{\cancel{18}\sin x}{\cancel{18}} = \frac{11\sin 120}{18}$

$\sin^{-1} x = 31.953 \approx 32.0°$



the measure of angle V to the nearest tenth.



$c^2 = a^2 + b^2 - 2ab\cos C$

$4.4^2 = 6.7^2 + 7.1^2 - 2(6.7)(7.1)\cos x$

$\frac{-75.94}{-2(6.7)(7.1)} = \cos x$

$.798192 = \cos x$

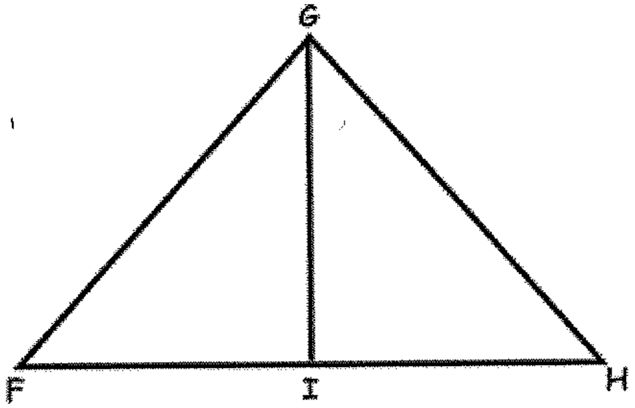
$x = 37.0^\circ$

Part 11

1. Prove Indirectly:

Given: ΔGHF is not isosceles; $\measuredangle GIF \cong \measuredangle GIH$

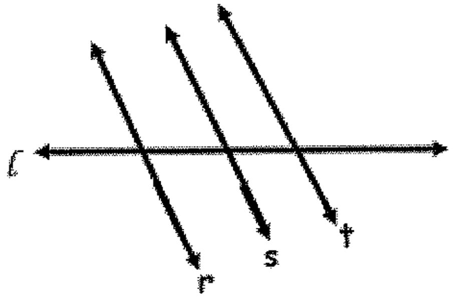
Prove: $\overline{GI}$ is not a median



2. Prove indirectly.

Given: $r \parallel s$, $s \nparallel t$

Prove: $r \nparallel t$



Corrected 5/27/15

GEOMETRY 21: Review for Final Exam *ANSWER KEY*

REV May 29, 2014

Part 1

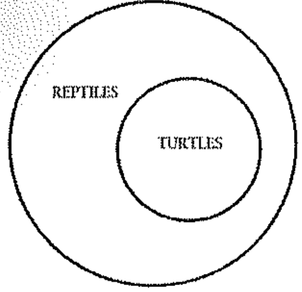
1) F
2) F
* 3) ~~F~~ T ✓
4) F
5) Point C
6) Line AB
7) Line CG
8) Yes
9) Segment EB
10) Infinitely many
11) x=7, m∡3=52°
12) 180 – y
13) ∡3 and ∡6
14) ∡DGF and ∡AGF
15) Parallel

16) Rotation
17) Reflection
18) Translation

19) incenter, inscribed
20) circumcenter, circumscribed
21) centroid
22) orthocenter

Part 2

1) If an animal is a turtle, then it is a reptile.
2) Hyp.: It is a turtle, Concl.: it is a reptile
3)



4) If angles are a linear pair, then they are supplementary, adjacent angles
5) If angles are supplem. and adjacent, then they form a linear pair.
6) Angles are a linear pair if and only if they are supplem. and adjacent.
7) Yes, both conditional and converse are true.
8) X=50°
9) X=15°

10) F
11) G
12) D
13) A
15) E
16) C
17) B
18) H

14) x = 4.08
15) 47.56
16) 102.16
17) 30.28
23) 149.72
24) 132.44
25) 30.28
26) 47.56

Part 3

1) C
2) C
3) B
4) C
5) C
6) A

7) c
8) d
9) c
10) b
11) c
12) a
13) d
14) c
15) d
16) b ✓
* 17) ~~d~~ c
18) b
19) a
20) c
21) b
22) a

23) F 24) T 25) T 26) T
27) T 28) 65° 29) 60°

30)

$1-\overline{MN}\parallel\overline{PO}$	$1-$ *given*
$2-<P$ *and* $<M$ sup	$2-$ *same side* int $<$ *thm*
$3-m<P+m<M=180$	$3-$ *defn* sup $<$'s
$4-<M\cong<O$	$4-$ *given*
$5-m<M=m<O$	$5-$ *defn* $\cong$
$6-m<P+m<O=180$	$6-$ *substitution*
$7-<P$ *and* $<O$ sup	$7-$ *defn* sup $<$'s
$8-\overline{MP}\parallel\overline{NO}$	$8-$ *converse of SSI* $<$ *thm*

Part 4

1) x=15, y=38   2) x=7/2 or -3   3) A=6, b=15

4) Yes, AAS or ASA
5) No
6) yes, any AAS, ASA, SAS or SSS

7) no   8) yes AAS or ASA   9) yes, HL

10)

$1-<D\cong<B;\overline{CB}\parallel\overline{DA}$	1 – *given*
$2-<BCA\cong<DAC$	2 – *Alt.Int.<'s thm*
$3-\overline{AC}\cong\overline{CA}$	3 – *reflexive*
$4-\triangle DCA\cong\triangle BAC$	4 – *AAS*

11)

$1-<1\cong<2;\ <3\cong<4$	1 – *given*
$2-\overline{BA}\cong\overline{BC}$	2 – *converse of isos.▲thm*
$3-\triangle BAE\cong\triangle BCD$	3 – *ASA*
$4-\overline{BE}\cong\overline{BD}$	4 – *CPCTC*
$5-\triangle BDE$ *is isosceles*	5 – *def isos.▲*

13) a. 134°;   b. x=7, y=4

12)

$1-ABCD$ *kite*; $\overline{AB}\cong\overline{BC};\overline{AD}\cong\overline{CD}$	1 – *given*
$2-\overline{BD}\cong\overline{BD}$	2 – *reflexive*
3 – ▲*ABD* ≅ ▲*CBD*	3 – *SSS*
$4-<ABD\cong<CBD$	4 – *CPCTC*
$5-\overrightarrow{BD}$ *bisects* $<ABC$	5 – *def bisector*
6 – ▲*ABC is isosceles*	6 – *def isos.▲*
$7-\overline{BD}$ *bisects* $\overline{AC}$	7 – the bisector of the vertex Angle of an isos ▲ is ⊥ bis. of base

Part 5

1) 966 u^2
2) 254 in^2
3) $160\sqrt{5}$ u^2
4) 12.5 u^2

5)216.9 u^2
6) 31.5 m^2
8) ~~7)~~a) right
b)obtuse
c)obtuse

7) ~~8)~~ slopes
$\overline{AB}=\overline{CD}=4/3$
$\overline{BC}=\overline{DA}=0$
Dist. Form.
AB=BC=CD=AD=5
Rhombus,
Area=20 u^2

9) $49\sqrt{3}$ in^2
10) $8\sqrt{3}$ cm^2
11) p=24
12)dist. Form.
MT=AH= $b\sqrt{2}$

13) mdpts. $\left(\frac{b}{2},\frac{b}{2}\right)$
14) slope of $\overline{MT}=-1$
$\overline{AH}=1$ so ⊥
15) 10.7
16) x= $5\sqrt{3}$, y=10

17) $3\sqrt{2}$ cm
18) x=24 in 25/2
19) 30.90
20) $192\sqrt{3}$ or 332.55 cm^2
21) $36\sqrt{3}$ or 62.35 ft^2

Part 6

1) $\overleftrightarrow{AC}$ *skew to* $\overleftrightarrow{FE}$, $\overleftrightarrow{CD}$ *skew to* $\overleftrightarrow{GH}$ 2) plane ABC   3)plane ABC || plane GFE, plane CDE || plane ABH

Part 7 **all SA are in square units, all V in cubic units*

1) SA=186   V=126
2) SA=759.6, V=1039.23
3) SA=175.2, V=124.7
4) SA=320, V=300
5) 40 in
6) 692.8 in^2
7) 15 in
8) 18.93 in
9) SA= 1828.62
10) SA=6861.2
11) r = 1.04 in
12) .3 cm
13) 1.3 in
14) SA=1304.2
15) SA=3246.4
16) 11 m
17) V= 68,094
18) V= 2171
19) r=4.33, SA=142.15
20) SA = 16π
21) r= 3 cm
22) V=11,494.04
23) V=94.03
24) SA= 523.6
25) SA = 28.4π ≈ 89.13
V= 58.613
26) SA= 250.45
V=$126\sqrt{3}$
≈ 218.24

? leave as d
fixed question ✓

Part 8

1) a 2) d 3)c 4) c 5)a 6) d 7) c 8) c 9) d 10) b 11) b 12) c 13) c 14) d 15) a
16)b 17) b 18) b 19) c 20) c 21) always 22) sometimes 23) always 24) always

25) $x = 35/4 \approx 8.75$, $y = 14$ 26) a) $\blacktriangle BAC \sim \blacktriangle FDE$ b) $\blacktriangle ABC \sim \blacktriangle FDE$ c) $\blacktriangle ABC \sim \blacktriangle EFD$ d) $\blacktriangle ABC \sim \blacktriangle DEF$

27)

$1 - \angle 1 \cong \angle 2$	1 – *given*
$2 - \angle A \cong \angle A$	2 – *reflexive*
$3 - \blacktriangle EAD \sim \blacktriangle CAB$	3 – *AA similarity*
$4 - \dfrac{AD}{AB} = \dfrac{AE}{AC}$	4 – *PSP (polygon similarity postulate)*

Part 9 *all answers in degrees				
1) 144	4) 23	9) 300	14) 65	19) 63
2) 134	5) 49	10) 60	15) 40	
3) 98	6) 49	11) 102	16) 28	
	7) 12	12) $468/\pi$	17) 57.5	
	8) 78	13) $176\pi/9$ mm	18) 52	

Part 10

105.0 ft 2) 1.9 m 3) 15.8 km 4) 946.37 in^2 5) 32° 6) 37°

Part 11

1) If today is not Tuesday, then tomorrow is not Wednesday.
2) C
3)

s	q	~q	~s	~q→~s
T	T	F	F	T
T	F	T	F	F
F	T	F	T	T
F	F	T	T	T

4) A

~~5)~~ 1) Assume $\overline{GI}$ is a median, then I is midpoint of $\overline{FH}$, FI = IH by defn. midpoint. $\overline{FI} \cong \overline{IH}$ by defn congruent. $\overline{GI} \cong \overline{GI}$ by reflexive. Given that $\measuredangle GIF \cong \measuredangle GIH$, then $\blacktriangle GIF \cong \blacktriangle GIH$ by SAS. By CPCTC, $\overline{GF} \cong \overline{GH}$, so $\blacktriangle GHF$ is isosceles by defn of isosceles. But this contradicts the given which says $\blacktriangle GHF$ is not isosceles. So our assumption must be false and $\overline{GI}$ is not a median.

~~6)~~ 2) Assume $r \parallel t$. Then $\measuredangle 3 \cong \measuredangle 1$ by corresponding $\measuredangle$s postulate. Since $r \parallel s$, $\measuredangle 1 \cong \measuredangle 2$ also by corresponding $\measuredangle$s postulate.
So $\measuredangle 3 \cong \measuredangle 2$ by transitive property. Therefore $s \parallel t$ by converse of corresponding $\measuredangle$s postulate. But this contradicts the given which says that line s is not parallel to line t. My assumption is false and line r is not parallel to line t.