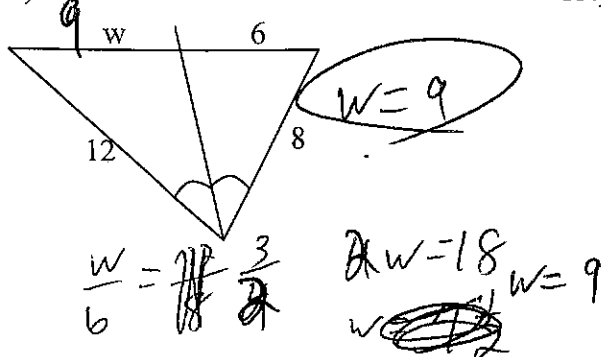


Part I: Multiple choice:

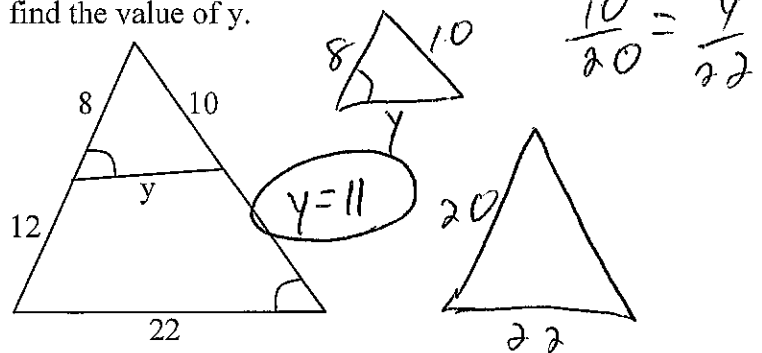
- 1.) If two triangles are similar, what is true about the corresponding angles?
 a.) similar b.) congruent c.) supplementary d.) complementary
- 2.) In triangle APE, if $m\angle P > m\angle E$, then...
 a.) $AE = AP$ b.) $AE < AP$ c.) $AE > AP$ d.) $AE \perp AP$
- 3.) In triangle TOD, if $FO > OD$, then...
 a.) $\angle D > \angle T$ b.) $\angle D < \angle T$ c.) $\angle D = \angle T$ d.) $\angle D$ is supp. to $\angle T$
- 4.) $\triangle ABC \sim \triangle DEF$, and $AB = 10$, $BC = 14$, and $AC = 12$. If $DF = 6$, then the perimeter of $\triangle DEF$ is _____.
 a.) 36 b.) 12 c.) 24 d.) 18
- 5.) If two triangles are congruent, then they must be...
 a.) supplementary b.) right triangles c.) similar d.) equilateral
- 6.) The largest angle of a triangle is across from the _____ side.
 a.) shortest b.) longest c.) equal d.) perpendicular
- 7.) If quad $ABCD \sim$ quad $EFGH$, then the $AD =$ _____.
 a.) BC b.) $\frac{(EH)(BC)}{FG}$ c.) $(EH)(BC)$ d.) EH
- 8.) If $\triangle PQR \sim \triangle STU$, then which of the following is true?
 a.) $m\angle R = m\angle U$ b.) $QR = TU$ c.) $\frac{PQ}{ST} = \frac{PR}{SU}$ d.) $ST < PQ$ e.) a & c only
- 9.) In $\triangle DOG$ and $\triangle CAT$, $GO = AT$ and $OD = CA$ but $m\angle O < m\angle A$, then...
 a.) $DG = CT$ b.) $DG < CT$ c.) $DG > CT$ d.) no conclusion possible
- 10.) From the problem above, which inequality theorem justifies your answer?
 a.) SSS b.) AAS c.) SAS d.) CPCTC
- 11.) Two regular pentagons will always be:
 a.) congruent b.) similar c.) hexagons d.) different sizes

Part II - answer the following.

14.) find the value of w.



15.) find the value of y.



16.) If two sides of a triangle are 18 and 8, then the third side must be between what two numbers?

$10 < x < 26$ $10 > 26$

17.) If $XW = YZ$, which of the following are true? Choose all that apply.

- A) $\frac{x}{w} = \frac{y}{z}$ B) $y = \frac{wx}{z}$ C) $\frac{x}{z} = \frac{y}{w}$ D) $\frac{x}{y} = \frac{x+z}{y+w}$

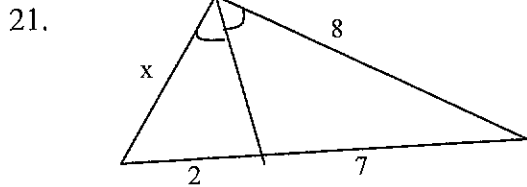
18. Two rectangles are similar. Circle one: Always Sometimes Never

19. Two rhombuses with a 120° angle are similar. True or False

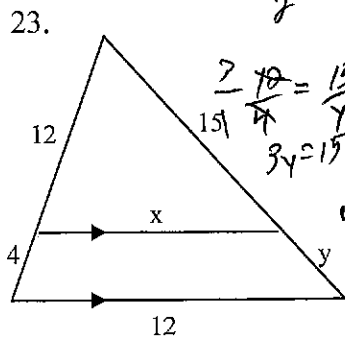
20. Triangle ABC is similar to triangle DEF. $AB = 5, BC = 8, AC = 11$, and $EF = 18$. Find the perimeter of triangle DEF.

$$\frac{8}{18} = \frac{24}{x} \quad \frac{18}{3} = 6 \quad \text{54}$$

Solve for the unknown part(s):

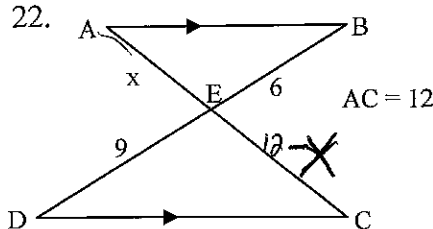


$$\frac{x}{2} = \frac{8}{7} \quad 7x = 16 \quad x = 2.3$$



$$\frac{2}{15} = \frac{15}{y} \quad y = 11.25$$

$$\frac{4}{12} = \frac{x}{12} \quad 36 = 4x \quad x = 9$$



$$9x = 72 - 6x \quad 15x = 72 \quad 5x = 24$$

$$\frac{x}{12-x} = \frac{2}{3} \quad 3x = 24 - 2x \quad 5x = 24 \quad x = 4.8$$

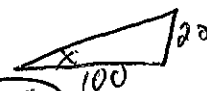
Final Review – Chapter 8

Part I: True/False

- F 1.) The geometric mean between 4 and 8 is 6. False
- T 2.) When an altitude is drawn to the hypotenuse of a right triangle, there are 3 similar triangles formed. True
- T 3.) The hypotenuse of a 30-60-90 triangle is twice as long as the shortest side.
- F 4.) The Pythagorean theorem says that in a right triangle, the hypotenuse is equal to the sum of the two legs.
- F 5.) The hypotenuse of a 45-45-90 triangle is twice as long as one of the legs.
- T 6.) In a triangle, if $a^2 + b^2 < c^2$, then the triangle is obtuse.
- T 7.) The sine of an acute angle in a right triangle is equal to the ratio of the opposite side to the hypotenuse.
- F 8.) The angle of elevation is never equal to the angle of depression.
- T 9.) If the legs of a right triangle are 6 and 8, then the hypotenuse is 10.
- F 10.) If the legs of a right triangle are 12 and 14, then the hypotenuse is 16.

Part II: Answer the following.

- 11.) If $\sin x = 5/13$, then $\cos x = \frac{12}{13}$.
- 12.) The grade of a road is 22%, what is the angle of elevation? 12.4
- 13.) A triangle with sides that are 15, 20, and 25 is a(n) right triangle.

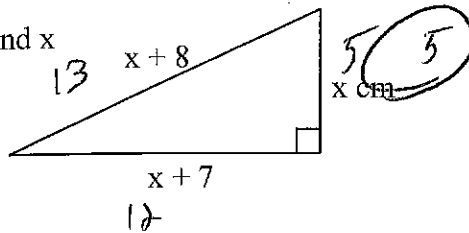


$$\tan x = \frac{22}{100}$$

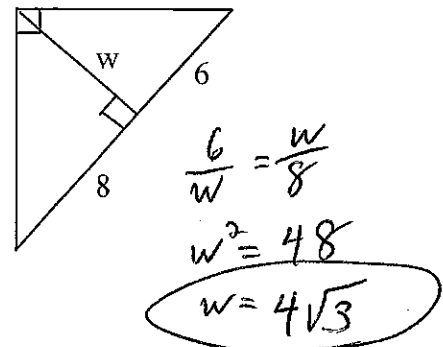
Part III: Solve the following

15.) If a rectangle has a length of 16 and a width of 10, what is the length of the diagonal?

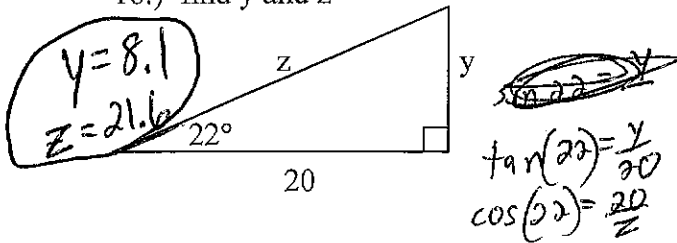
16.) find x



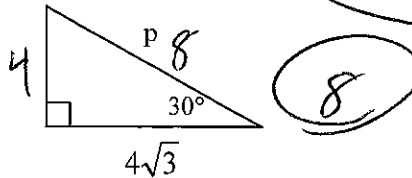
17.) find w



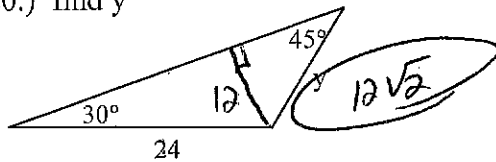
18.) find y and z



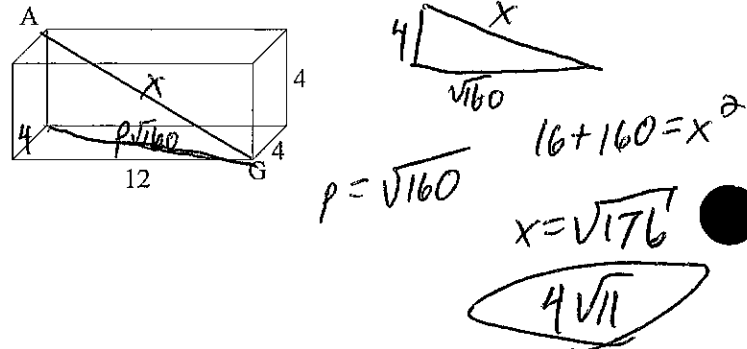
19.) find p



20.) find y



21.) Find AG



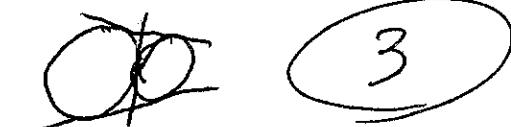
Final Review – Chapter 9

Part I: fill in the blanks

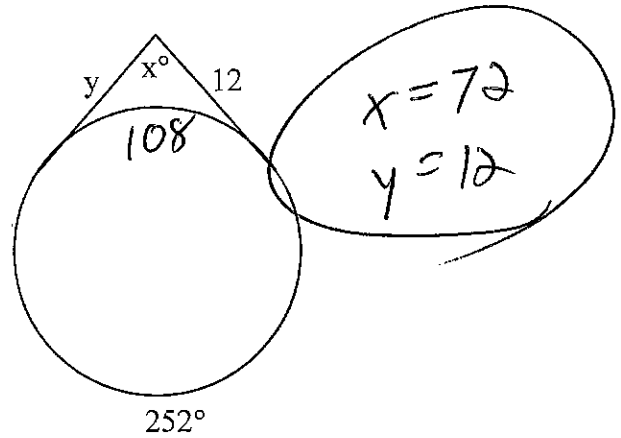
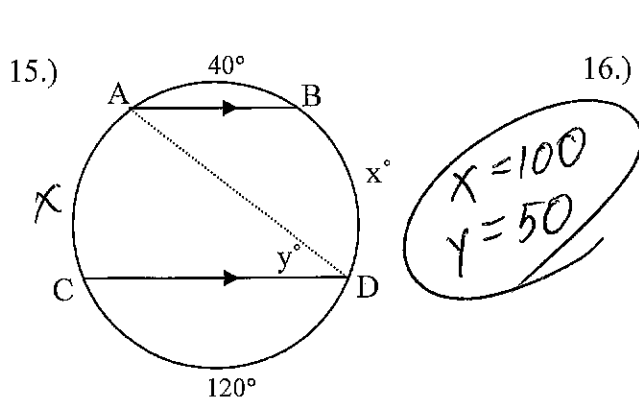
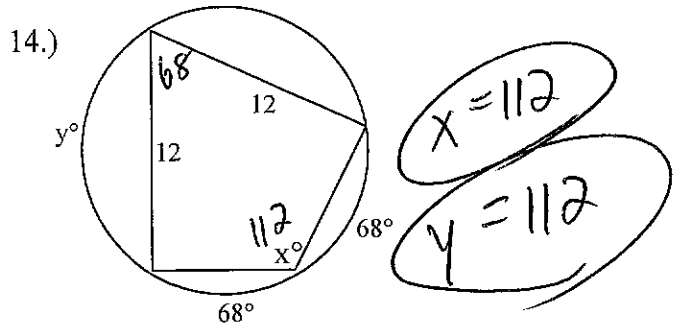
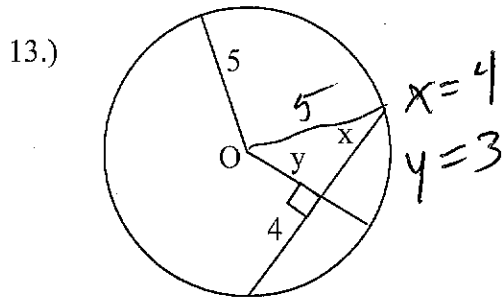
- 1.) A inscribed angle is formed by two chords with a common endpoint.
- 2.) If a quadrilateral is inscribed in a circle, and one angle is 54 degrees, the measure of the opposite angle is 126.
- 3.) A radius meets a tangent at a 90 degree angle at the point of tangency.
- 4.) A central angle is formed by two of these: radii.
- 5.) A secant is a line that intersects a circle at exactly 2 point(s).
- 6.) A tangent intersects a circle at exactly 1 point(s).
- 7.) If a radius is perpendicular to a chord, then the radius bisects the chord.
- 8.) The chord formed by two radii meeting at a 180 degree angle is a diameter of the circle.
- 9.) When the diameter of a circle is 20, the radius is 10.

Answer the following:

- 10.) If the circumference of a circle is 14π , then the area is 49π .
- 11.) An inscribed angle of a circle has a measure of 48° . What is the measure of the intercepted arc? 96 degrees
- 12.) If two circles are externally tangent to each other, how many common tangents may they share? 3



Part II – find the value of the variable(s). (*O* is the center of the circle)

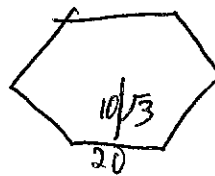


Final Review – Chapter 11

1.) The area of a circle is 25π , find the circumference

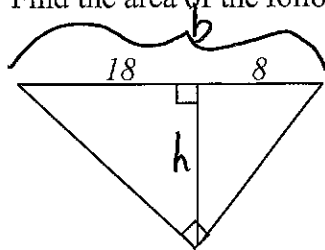
Handwritten solution: 10π

2.) Find the area of a regular hexagon with side = 20



Handwritten solutions:
 $a = 10\sqrt{3}$
 $A = \frac{1}{2} p a$
 $A = \frac{1}{2} 120 \cdot 10\sqrt{3}$
 $= 600\sqrt{3}$

3.) Find the area of the following triangle.



Handwritten solutions:
 $\frac{18}{h} = \frac{h}{8}$
 $h^2 = 18 \cdot 8$
 $h = 12$
 $A = \frac{1}{2} b h$
 $A = \frac{1}{2} 26 \cdot 12$
 $A = 156$

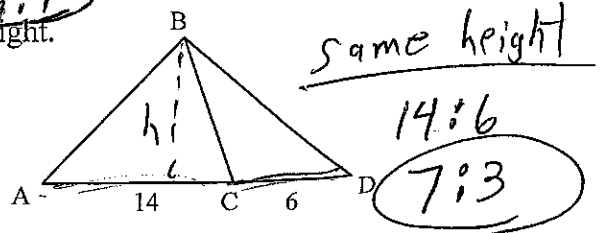
4.) What is the ratio of the areas of two circles with radii 7, and 12.

Handwritten solution: $49:144$

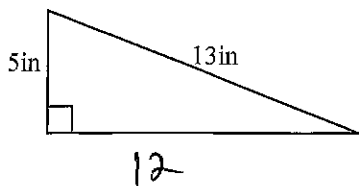
5.) The areas of two similar triangles are in the ratio of 36:49. Find the ratio of their perimeters.

Handwritten solution: $6:7$

6.) Find the ratio of the areas of the two triangles on the right.
 ($\triangle ABC$ and $\triangle DBC$)

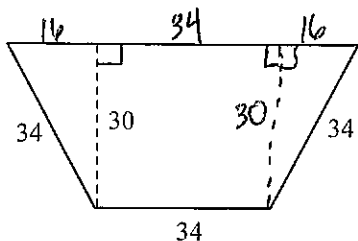


7.) Find the area of the following.



$$\frac{1}{2} \cdot 5 \cdot 12 = 30$$

8.) Find the area of the following.



$$A = 1500$$

Final Review – Chapter 12

- 1.) Give the lateral area of a cylinder with radius equal to 8 and height equal to 15. $240\pi = 754.0$
- 2.) Find the volume of a sphere with radius equal to 10. $\frac{4}{3}\pi 10^3 = \frac{4000\pi}{3} = 4188.8$
- 3.) Find the total surface area of a regular square pyramid with base edge equal to 10 and height equal to 12. $l = 13$
 $100 + \frac{1}{2} \cdot 40 \cdot 13 = 360$
- 4.) Find the volume of a triangular prism with base edges equal to 12, 16, and 20 if the prism has a height equal to 28. $B = 96$ $A = 96 \cdot 28 = 2688$
- 5.) Find the lateral area of a cone with radius equal to 3 and height equal to 4. $l = 5$
 $15\pi = 47.1$

Final Review – Chapter 13

- 1.) Give the slope of a line that contains the points (4, -2) and (8, -4). $\frac{-2}{4} = -\frac{1}{2}$
- 2.) Give the distance between the points (5, 8) and (-7, 13). 13
- 3.) Give the midpoint of a segment with endpoints (3, 7) and (11, -1). (7, 3)
- 4.) Give the equation of a line that contains the points (2, 1) and (-5, 15). $m = \frac{14}{-7} = -2$

$$y = -2x + b$$

$$1 = -2(2) + b$$

$$5 = b$$

$$y = -2x + 5$$