

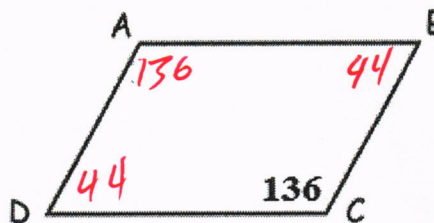
GEOMETRY BASIC Ch 6-8, 10-12

Semester 2 Final Exam REVIEW

CHAPTER 6

1. Find $m\angle B$ in parallelogram ABCD

Hint: Consecutive angles are supplementary so
consecutive angles = 180



2. What is the sum of the measures of the interior angles of a pentagon?

Hint: Sum of the interior angles = $(n-2) \cdot 180$

$$(5-2) \cdot 180 = 540$$

3. What is the measure of *each* interior angle in a regular octagon?

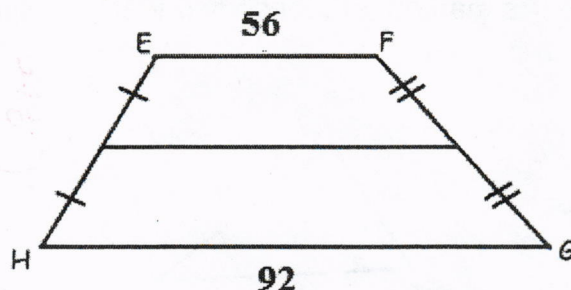
Hint: Sum of ONE interior angles = $\frac{(n-2) \cdot 180}{n}$

$$\frac{(8-2) \cdot 180}{8} = 135$$

4. What is the length of the midsegment in trapezoid EFGH?

Hint: Midsegment = $\frac{\text{top base} + \text{bottom base}}{2}$

$$\frac{56 + 92}{2} = \frac{148}{2} = 74$$



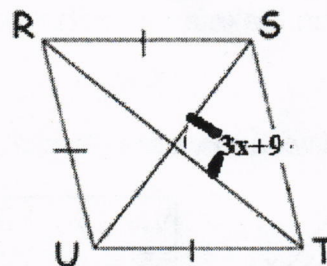
5. Find the value of x in the rhombus shown:

Hint: Central Angle in a rhombus = 90
(diagonals are perpendicular)

$$3x + 9 = 90$$

$$3x = 81$$

$$x = 27$$



6. Find the value of x in parallelogram FGHI.

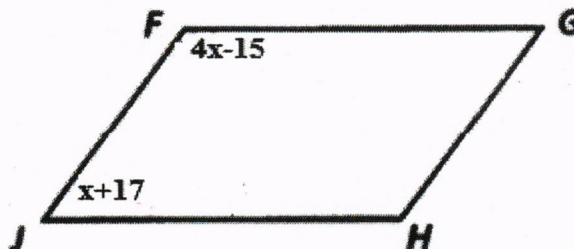
Hint: Consecutive angles are supplementary so
consecutive angles = 180

$$4x - 15 + x + 17 = 180$$

$$5x + 2 = 180$$

$$5x = 178$$

$$x = 35.6$$



7. List and illustrate all the properties of a....

Parallelogram

rhombus

kite

rectangle

trapezoid

CHAPTER 7

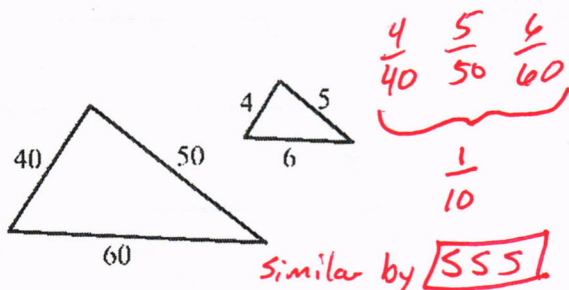
8. $\triangle ABC \sim \triangle DEF$ and the similarity ratio of $\triangle ABC$ to $\triangle DEF$ is $\frac{6}{7}$. If $AB = 120$, what is DE ?

Hint: Make a proportion—cross multiply—then solve.

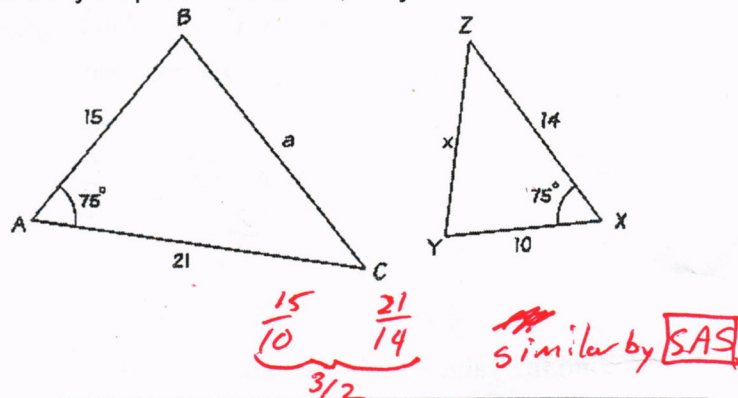
$$\frac{6}{7} = \frac{120}{x} \rightarrow 6x = 840$$

$$x = 140$$

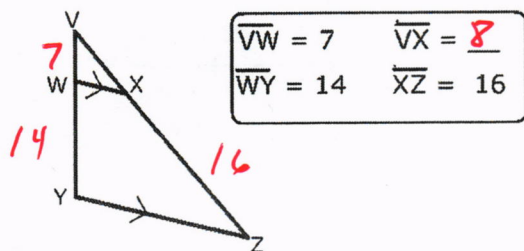
9. As marked, are these two triangles similar? If so how do you prove it? If not, why not?



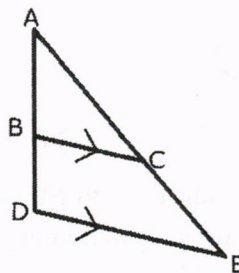
Hint: Make sure each ratio of sides is equal.



10. Lines wx and yz are parallel. Find the value of vx .



HINT:

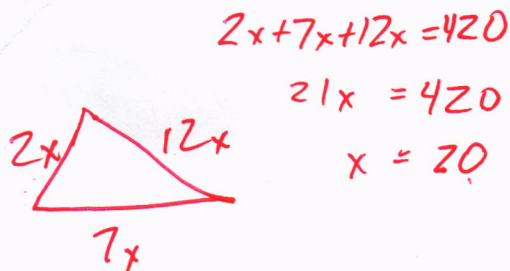


The Side Splitter theorem states that

$$\frac{AC}{CE} = \frac{AB}{BD}$$

11. The lengths of the sides of a triangle are in the extended ratio 2 : 7 : 12. Their perimeter is 420cm. What is the length of the longest side in centimeters?

Hint: draw a triangle and don't forget the x's!!



$2x : 7x : 12x$
 $40 : 140 : 240$

12. Explain the following postulates for proving triangles are similar: Make sure you show examples
 AA~ SAS~ SSS~

13. Solve the proportion for x: $\frac{9}{7} = \frac{x-3}{49}$

HINT: CROSS MULTIPLY

$441 = 7x - 21$
 $462 = 7x$
 $66 = x$

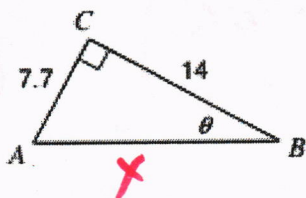
14. To the nearest inch, a door is 72 in. tall and 28 in. wide. What is the ratio of the width to the height?

Hint: Make a proportion—cross multiply—then solve.

$\frac{28}{72} = \frac{7}{18}$ OR $7:18$

CHAPTER 8

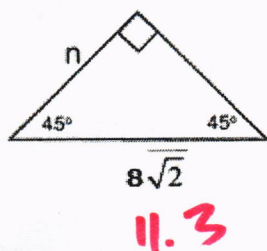
15. What is the length of the hypotenuse of the triangle below to the nearest tenth?



$7.7^2 + 14^2 = x^2$
 $15.9 \rightarrow 16$

16. What is the value of n?

Hint: in a 45-45-90 triangle the side-side-hyp are in a ratio of $x - x - x\sqrt{2}$



$\sin 45 = \frac{x}{11.3}$

$x = 8$

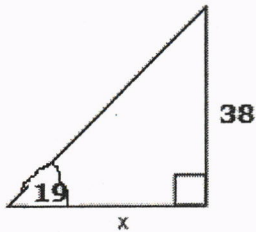
17. Put the radical into simplest radical form. $\sqrt{450}$

HINT: make a factor tree

$$\sqrt{225} \sqrt{2}$$

$$15\sqrt{2}$$

18. What is the value of x to the nearest foot?



~~$\tan 19 = \frac{x}{38}$~~

$$\tan 19 = \frac{38}{x} \rightarrow x = \frac{38}{\tan 19}$$

$$x = 110.4$$

19. Classify a triangle with side lengths of 7, 10, 15.

HINT: USE PYTHAGOREAN THEOREM

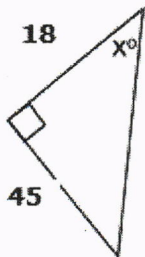
- (a) Acute
- (b) Right
- ☒ (c) Obtuse
- (d) Scalene
- (e) None

$$7^2 + 10^2 \text{ — } 15^2$$

$$149 \text{ — } 225$$

20. What is the value of x to the nearest degree?

HINT: USE SOHCAHTOA



$$\tan x = \frac{45}{18}$$

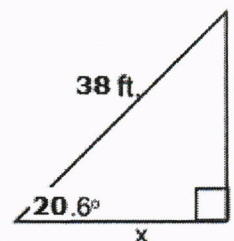
$$\tan^{-1}\left(\frac{45}{18}\right) \quad 68.2$$

23. A 38 ft. long ramp rises at an angle of 20.6° . How long is the base of the ramp to the nearest foot?

HINT: USE SOHCAHTOA

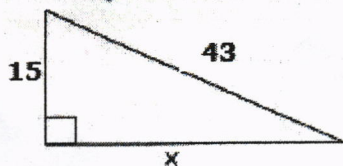
$$\cos 20.6 = \frac{x}{38}$$

$$x = 35.6$$



24. Find x in the simplest radical form.

HINT: USE SOHCAHTOA

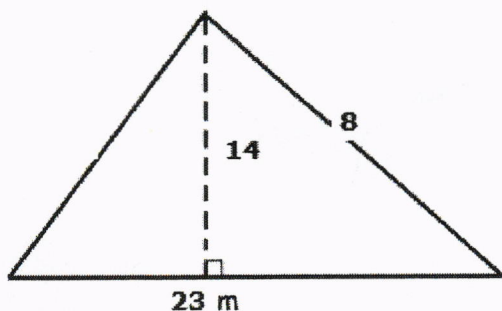


$$15^2 + x^2 = 43^2$$

$$40.3$$

CHAPTER 10—HINT: USE THE VARIOUS AREA FORMULAS YOU'VE LEARNED!

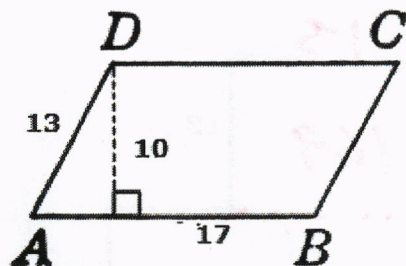
25. Find the area of the triangle shown:



$$\frac{1}{2} \cdot 23 \cdot 14$$

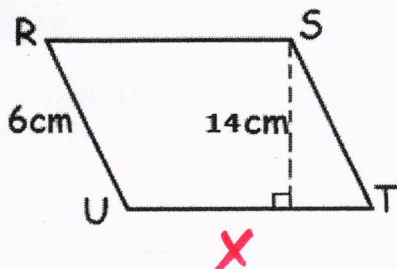
$$161 \text{ u}^2$$

26. What is the area of parallelogram ABCD?



$$17 \cdot 10 = 170 \text{ u}^2$$

27. If the area of parallelogram RSTU is 46 cm^2 , what is the length of \overline{UT} ?



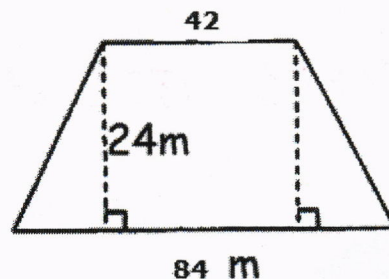
$$14 \cdot x = 46$$

$$x = 3.3$$

28. Find the area of the trapezoid shown.

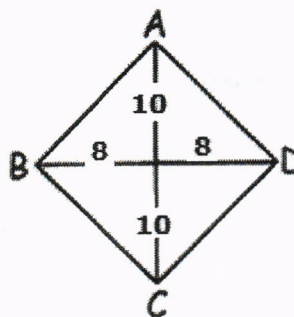
$$\frac{84 + 42}{2} \cdot 24$$

$$1512$$



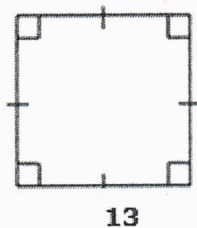
29. Polygon ABCD is a rhombus, find its area.

$$\frac{1}{2} \cdot 20 \cdot 16 = 160 \text{ u}^2$$



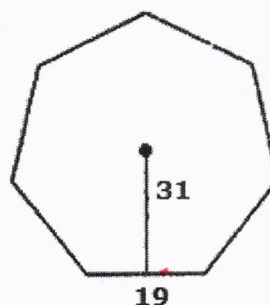
30. Find the area of the polygon shown:

$$13 \cdot 13 = 169 \text{ u}^2$$



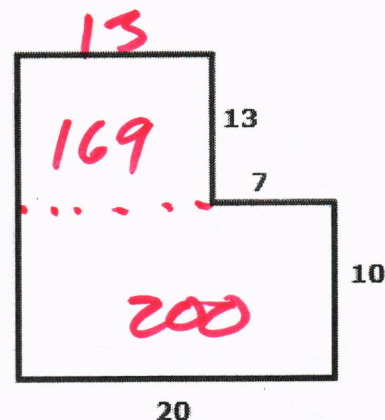
31. Find the area of the regular heptagon:

$$\frac{1}{2} \cdot 31 \cdot 19 = 294.5$$



32. All the angles in the polygon shown are right angles. Find the area.

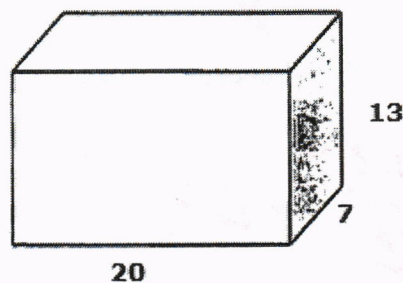
$$369$$



CHAPTER 11—HINT- USE THE VARIOUS VOLUME/SURFACE AREA/AND LATERAL AREA FORMULAS YOU'VE LEARNED....ALSO IF NECESSARY—FIND THE BASE AREA AND BASE PERIMETER FIRST!

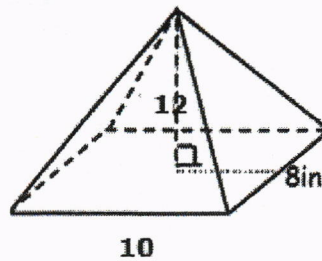
33. Find the volume of the rectangular prism.

$$20 \times 7 \times 13 = 1820 \text{ u}^3$$

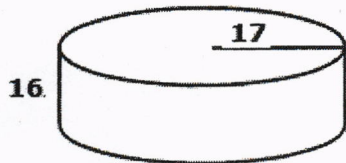


34. Find the volume of the rectangular pyramid.

$$V = \frac{1}{3} \cdot 100 \cdot 12 = 400 \text{ in}^3$$



35. Find the surface area of the solid.



$$3523 \text{ u}^2$$

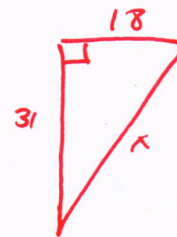
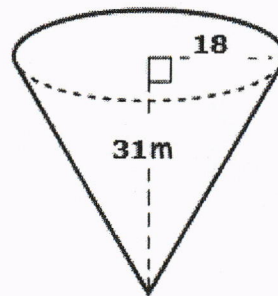
or

$$1122\pi \text{ u}^2$$

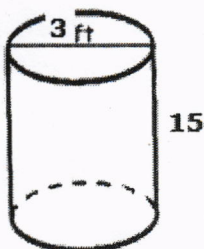
36. Find the slant height of the cone.

$$18^2 + 31^2 = x^2$$

$$35.8 \text{ m}^3$$



37. Find the lateral area of the cylinder. Round your answer to the nearest tenth.

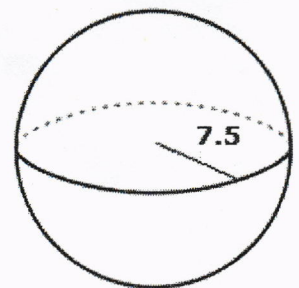


$$r = 1.5$$

$$45\pi \text{ or } 141.3 \text{ ft}^2$$

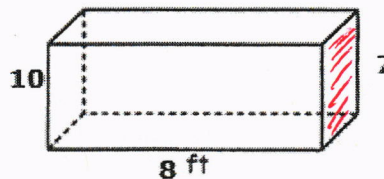
38. Find the volume of the solid shown. Round your answer to the nearest tenth

$$562.5\pi \text{ or } 1766.3 \text{ u}^3$$



39. Find the Surface area of the solid.

$$412 \text{ ft}^2$$



40. A polyhedron has 12 edges and 7 vertices. How many faces does it have?

$$F + V = E + 2$$

$$F + 7 = 12 + 2$$

$$F + 7 = 14$$

7 faces.