

# CUMULATIVE REVIEW

## CHAPTERS 1-12

### Cumulative Review Chapters 1-12

#### Time Schedule

Basic: 2 days  
Average: 1 day  
Advanced: 1 day

#### Resource References

Evaluation  
Tests and Quizzes  
Cumulative Review Test  
Chapters 1-12  
Series 1, 2, 3

#### Assignment Guide

##### Basic

Day 1: 4-11  
Day 2: 12, 18, 20, 23, 24a, 26,  
27, 31

##### Average

7, 9, 12, 17, 28, 24a, 25, 31, 35

##### Advanced

24, 26, 29-31, 34, 37, 39, 41

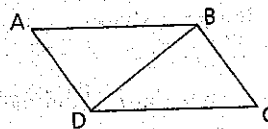
For classes that are approaching the end of the term, these 42 problems provide a comprehensive review of the first 12 chapters. Additional end-of-term review problems can be selected from the Cumulative Review for Chapters 1-16 (pp. 706-714).

### Problem-Set Notes and Additional Answers

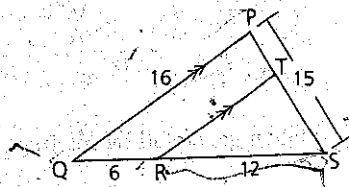
- See Solution Manual for answer to problem 3.

### Problem Set A

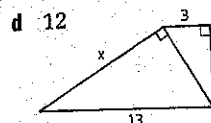
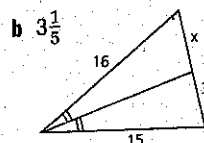
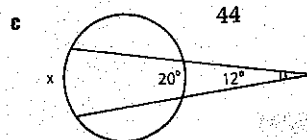
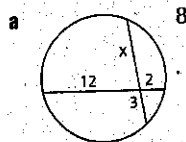
- The measure of one of the acute angles of a right triangle is nine times the measure of the other acute angle. Find the measure of the larger acute angle. 81
- The perimeter of  $\triangle ABC$  is 28. If  $AB = 2x + 3$ ,  $BC = 4x - 5$ , and  $CA = 8x - 19$ , is  $\triangle ABC$  scalene, isosceles, or equilateral? Isosceles
- Given:  $\overline{BD} \perp \overline{AD}$ ,  $\overline{BD} \perp \overline{BC}$ ,  $\overline{AB} \cong \overline{CD}$   
Prove:  $ABCD$  is a  $\square$ .



- Given:  $\overline{PQ} \parallel \overline{TR}$   
Find: a  $PT$  5  
b  $TR$   $\frac{32}{3}$



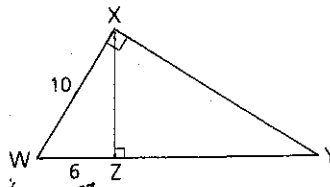
- Find the value of  $x$  in each figure.



- Two similar triangles have areas of 9 and 25.
  - What is the ratio of a pair of corresponding sides?  $\frac{3}{5}$
  - What is the ratio of the triangles' perimeters?  $\frac{3}{5}$

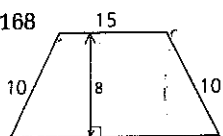
7 Given: Diagram as marked.

- Find: a  $WY \frac{50}{3}$   
 b  $YZ \frac{32}{3}$   
 c  $XZ$  8

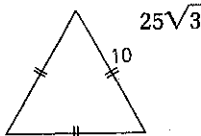


8 Find the areas of the trapezoid, the triangle, and the circle.

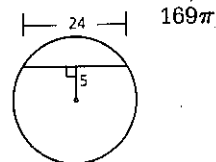
a 168



b



c

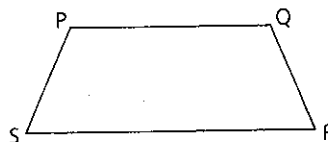


9 Given: SPQR is an isosceles trapezoid.

$$\angle S = (x + 40)^\circ$$

$$\angle Q = (2x - 7)^\circ$$

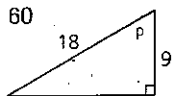
Find:  $\angle R$ .  $89^\circ$



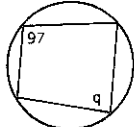
10 The numbers 3.14 and  $3\frac{1}{7}$  are frequently used as approximations of  $\pi$ . Use your calculator to determine which of these approximations is the more accurate.  $3\frac{1}{7}$

11 Find  $p$ ,  $q$ ,  $r$ , and  $s$ .

a 60

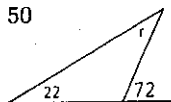


b

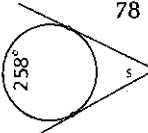


83

c 50



d



12 a Find the fourth proportional in a proportion whose first three terms are 5, 3, and 30. 18

b Find the mean proportionals between 8 and 18.  $\pm 12$

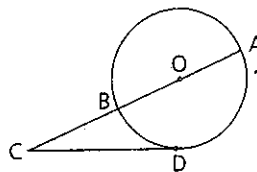
13 Given:  $\odot O$  with tangent  $\overline{CD}$ ,

$$CD = 15,$$

$$BC = 9$$

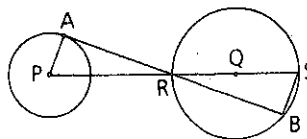
Find: a  $AC$  25

b The diameter of  $\odot O$  16



14 Given:  $\overline{AR}$  is tangent to  $\odot P$ .  
 $\overline{RS}$  is a diameter of  $\odot Q$ .

Prove:  $\triangle PAR \sim \triangle SBR$

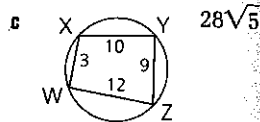
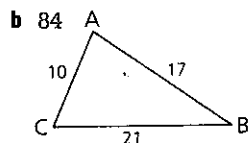
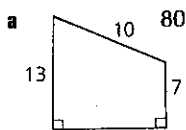


Problem:  
 Addition  
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**Cumulative Review Problem Set A, continued**

- 15 In  $\triangle ABC$ , D and E are the midpoints of  $\overline{AB}$  and  $\overline{AC}$ ,  $DE = 4x$ , and  $BC = 2x + 48$ . Find BC. 64

- 16 Find the area of each polygon.

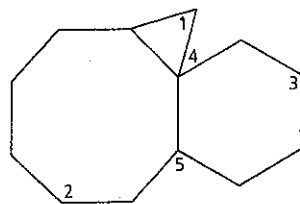


- 17 Find the number of sides of an equiangular polygon if each interior angle is  $170^\circ$ . 36

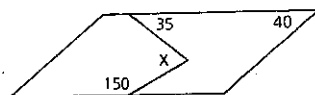
- 18 The perimeter of an isosceles triangle is 36. One side is 10. What are the possible lengths of the base? 16 or 10

- 19 Each polygon shown is regular.

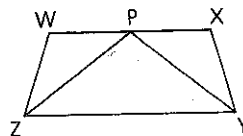
- a Find the measure of  $\angle 1$ . 60  
 b Find the measure of  $\angle 2$ . 135  
 c Find the measure of  $\angle 3$ . 120  
 d Find the measure of  $\angle 4$ . 45  
 e Will a regular pentagon fit at  $\angle 5$ ? No



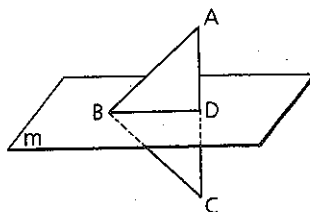
- 20 Given: Parallelogram as marked  
 Find:  $x$  65



- 21 Given: WXYZ is an isosceles trapezoid, with  $\overline{WZ} \cong \overline{XY}$ .  $\triangle PZY$  is isosceles.  
 Prove: P is the midpoint of  $\overline{WX}$ .



- 22 Given:  $\overleftrightarrow{AC} \perp m$ ,  $\overline{BC} \cong \overline{BA}$   
 Prove: D is the midpoint of  $\overline{AC}$ .



- 23 Find the length of a  $45^\circ$  arc of a circle whose radius is 8.  $2\pi$

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 Manual for an-  
 lems 21 and 22.

### Problem Set B

24 What is the angle formed by the hands of a clock at

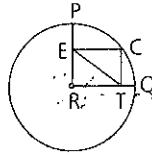
a 11:30?  $165^\circ$

b 2:05?  $32\frac{1}{2}^\circ$

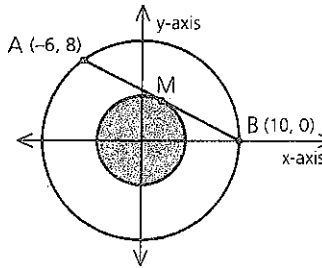
c 3:24?  $42^\circ$

25 Given: Rectangle RECT in  $\odot R$ ,  
 $RT = 5$ ,  $TQ = 2$

Find:  $ET$  7

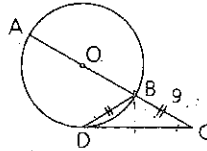


26 If M is the midpoint of  $\overline{AB}$ , what is the area of the shaded region?  $20\pi$



27 A woman walks 20 m west, 100 m south, another 8 m west, and then 4 m north. How far is she from her starting point? 100 m

28 Given:  $\odot O$ ,  $CB = 9$ ,  
 $\angle C = 30^\circ$ ,  $\overline{BC} \cong \overline{BD}$ ;  
 $\overleftrightarrow{CD}$  is tangent to  $\odot O$ .

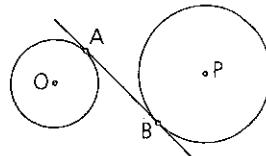


Find: a  $m\widehat{AD}$  120

b  $CD$   $9\sqrt{3}$

c The radius of  $\odot O$  9

29 Given: The radius of  $\odot O$  is 0.7.  
 The radius of  $\odot P$  is 1.1.  
 $\overline{AB}$  is a common internal tangent.  
 $AB = 2.4$



Find: a  $OP$  3

b The distance between the circles 1.2

30 Given: Diagram as marked, with  $\overleftrightarrow{PA}$  and  
 $\overleftrightarrow{PD}$  tangent to  $\odot O$

Find: a  $\widehat{AD}$   $98^\circ$

b  $m\angle P$  82

