Name __Key__                                             Date _____ Pd ___

## 10.6 Segment Relationships in Circles CYU

| CONCEPTS | BASIC | INTERMEDIATE | ADVANCED |
|---|---|---|---|
| Chord-Chord Product Theorem | 1 | 6, 8 | |
| Secant-Tangent Product Theorem | 2 | 4, 9 | |
| Secant-Secant Product Theorem | 3 | 5, 7 | |
| Real World Application | | | 10, 11 |

**In Exercises 1–9, find the value of x.**

1.



$x + 5$
$2x$   $21$
$28$

$X = 10$

2.



$42$   $20$
$x$

$X = 8$

3.



$2x$
$4$
$3$   $3x + 1$

$X = 4$

4.



$3x$
$10$
$2x$

$X = 4$

5.



$x + 2$   $2x - 8$
$2x - 5$
$x + 1$

$X = 8$

6.



$3x - 3$
$2x$
$x + 6$
$x$

$X = 15$

7.



$8$
$x + 3$
$10$
$x - 3$

$X = 9$

8.



$x + 10$
$x$
$x + 13$
$x + 1$

$X = 10$

9.



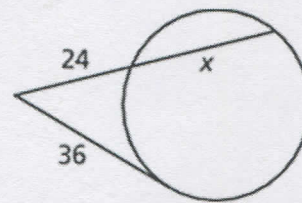$24$   $x$
$36$
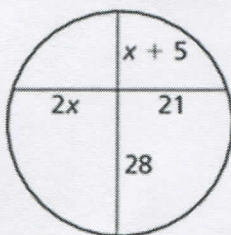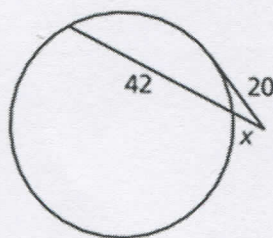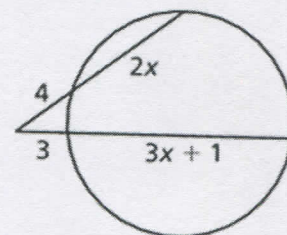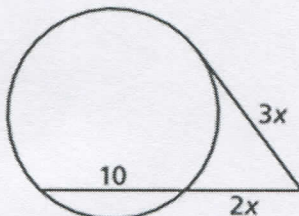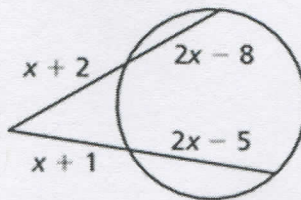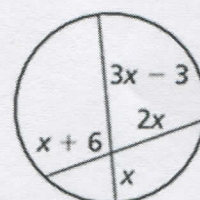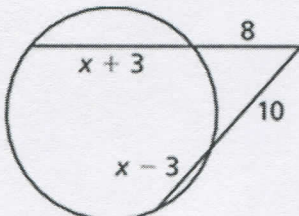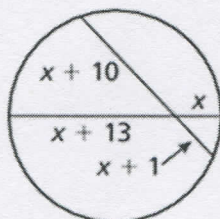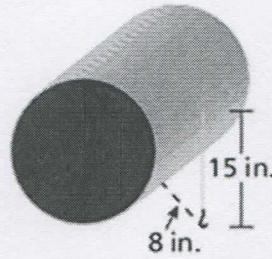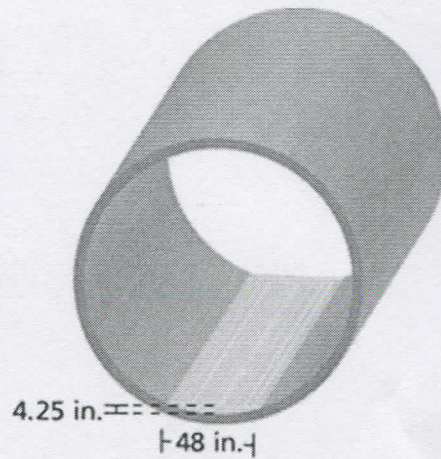
$X = 30$

10. A large industrial winch is shown. There are 15 inches of cable hanging free off of the spool and the distance from the end of the cable to the spool is 8 inches. What is the diameter of the spool?

15 in.

8 in.

$$X = 20.125 \text{ in}$$

11. The diagram shows a cross-section of a large storm drain pipe with a small amount of standing water. The distance across the surface of the water is 48 inches and the water is 4.25 inches deep at its deepest point. What is the diameter of the storm drain pipe?

$$= 139.779$$
$$d \approx 140 \text{ in}$$

4.25 in.

|— 48 in. —|

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