GRADE 10 ESSENTIAL
UNIT E – TRIGONOMETRY
CALCULATE SIDE OF TRIANGLE - PUZZLE

MrF

Name:_____
Date: _____

Show work!

Who Turns Out the Lights on Halloween?

Cross out the letters above each correct answer. Then, when you finish, write the remaining letters in the spaces of the blank grid below.

SO	TH	AC	AT	EB	EL	ME	AB	IG	ET	OO
42.5 m	22.5 ft	20.6 m	5.0 cm	130.5 ft	128.1 ft	92.51	19.0 ft	4.7 cm	16.1 mi	298.57

HT	OP	SW	AY	~~IN~~	QU	IT	UP	MU	CH	~~ON~~
55.4 in.	9.42	20.3 mi	24.4 mi	5.62	37.8 ft	38.1 m	17.1 ft	52.0 in.	95.32	5.7 in.

In exercises 1-4, solve the equation. Round your solution to the nearest two decimal places (0.01).

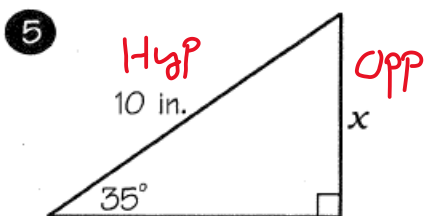① $\sin 22° = \frac{x}{15}$ ② $\tan 75° = \frac{n}{80}$ ③ $\sin 48° = \frac{7}{a}$ ④ $\cos 6° = \frac{92}{k}$
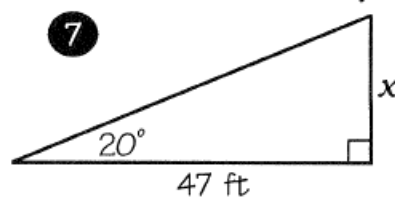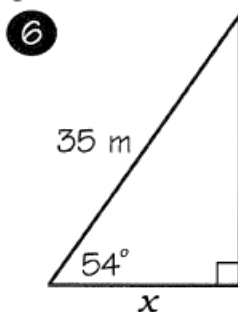
$x = 15 \cdot \sin 22$
$x = 5.62$

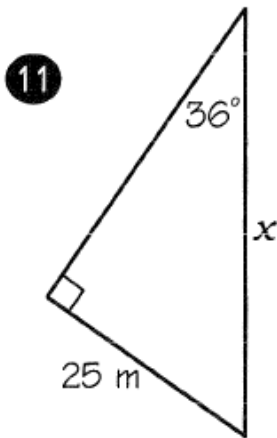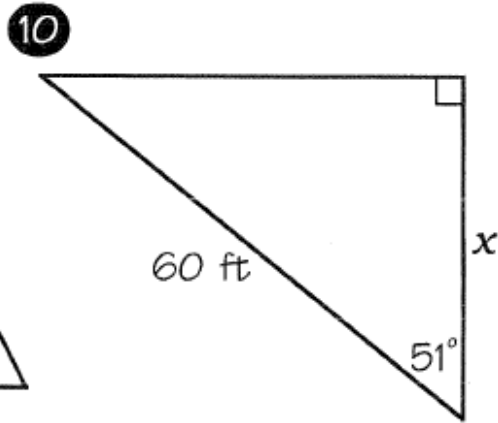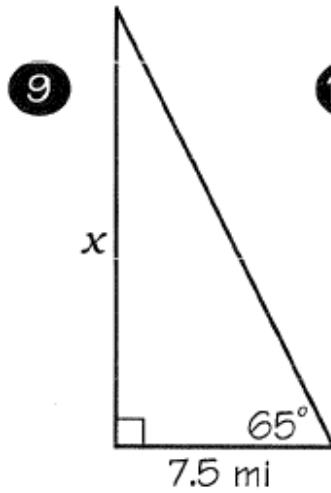In exercises 5 -12, find the length of the side labeled x. Round to **one** decimal place.

⑤ Hyp 10 in. Opp x 35°

$\sin(35) = \frac{x}{10}$
$x = 10 \sin(35)$
$x = 5.7$ in

⑥ 35 m x 54°

⑦ 20° 47 ft x

SOH CAH TOA

8

16°

18 cm

x

9

x

65°

7.5 mi

10

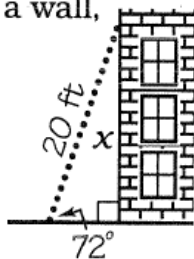60 ft

x

51°

11
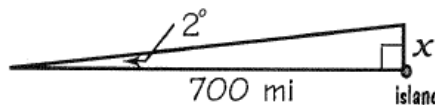
36°

x

25 m

12

90 in.

x

60°
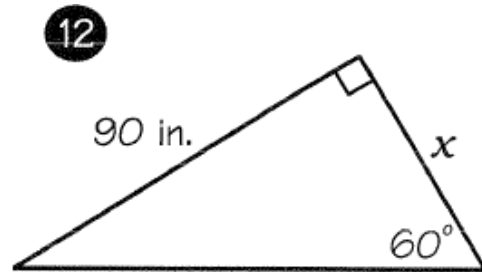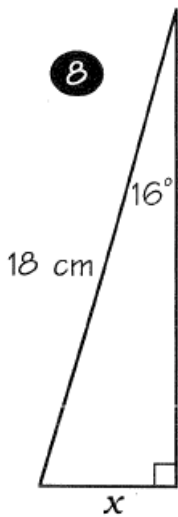
In Exercises 13-15, find the required length. Round to one decimal place.

13 When a 20-ft ladder is leaned against a wall, it makes a 72° angle with the ground. How high up on the wall does the ladder reach?

20 ft

x

72°

14 A ship is sailing toward a small island 700 mi away. If the ship is 2° off course, by how many miles will it miss the island?

2°

700 mi

x

island

15 A cable from the top of a 100-ft telephone tower makes a 50° angle with the ground. How long is the cable?

x

100 ft

50°