Get The Message

DIRECTIONS:

Determine whether or not the given numbers are possible measures for the sides of a right triangle. Circle the appropriate letter next to each set of measures.

When you finish, print the circled letters in the row of boxes at the bottom of the page. FIRST print those from the column marked "Right Triangle," THEN print those from the column marked "Not a Right Triangle."

A MESSAGE WILL APPEAR!

GENUWHINE
BOLOGNA
SAUSAGE
FOR SALE HERE

	RIGHT TRIANGLE	NOT A RIGHT TRIANGLE
① $a = 3, b = 4, c = 5$	D	E
② $a = 4, b = 5, c = 6$	R	V
③ $a = 5, b = 12, c = 13$	O	A
④ $a = 6, b = 9, c = 11$	L	E
⑤ $a = 7, b = 24, c = 25$	G	R
⑥ $a = 8, b = 10, c = 13$	F	A
⑦ $a = 6, b = 11, c = \sqrt{157}$	S	R
⑧ $a = 9, b = \sqrt{115}, c = 14$	O	L
⑨ $a = \sqrt{24}, b = 7, c = 9$	N	R
⑩ $a = 12, b = 20, c = 24$	R	U
⑪ $a = 9, b = 40, c = 41$	F	N
⑫ $a = 1.5, b = 2, c = 2.5$	T	B
⑬ $a = 2.2, b = 3, c = 3.8$	E	F
⑭ $a = 10, b = 16, c = \sqrt{356}$	E	I
⑮ $a = 4, b = \sqrt{150}, c = 13$	N	F
⑯ $a = \sqrt{139}, b = 12, c = 17$	R	L
⑰ $a = 30, b = 40, c = 50$	N	E
⑱ $a = 10, b = 24, c = 26$	H	A
⑲ $a = \sqrt{7}, b = \sqrt{8}, c = \sqrt{14}$	E	I
⑳ $a = 0.8, b = 1.5, c = 1.7$	A	N
㉑ $a = 4.5, b = 4.5, c = 7$	D	F
㉒ $a = 1, b = 2, c = 3$	L	E

*FIRST PRINT THE CIRCLED LETTERS FROM THE "RIGHT TRIANGLE" COLUMN, THEN FROM THE OTHER COLUMN.*

What Did Lancelot Say To The Beautiful Ellen?

TO ANSWER THIS QUESTION:

Cross out the box containing the answer to each problem. When you finish, write the letters from the boxes that are not crossed out in the boxes at the bottom of the page.

① For each right triangle, find the length of the side that is not given:

A 6 m, 10 m

B 7 m, 12 m

C 13 m, 8 m

D 11 m, 9 m
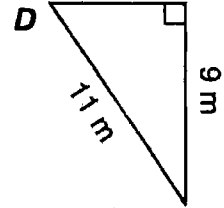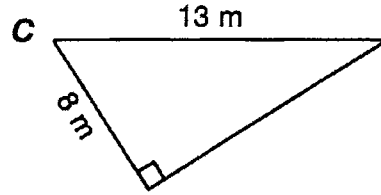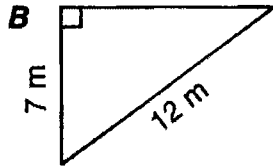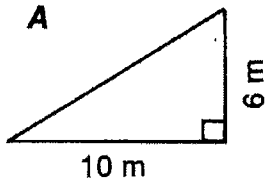
② The bases on a baseball diamond are 90 feet apart. How far is it from home plate to second base?

⑤ An 18-foot ladder is leaned against a wall. If the base of the ladder is 8 feet from the wall, how high up on the wall will the ladder reach?
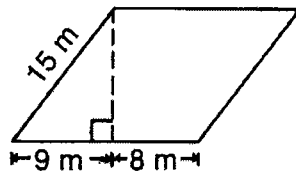
③ Orgo has let out 50 meters of kite string when he observes that his kite is directly above Zorna. If Orgo is 35 meters from Zorna, how high is the kite?
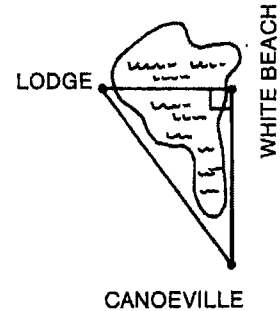
50 m, 35 m
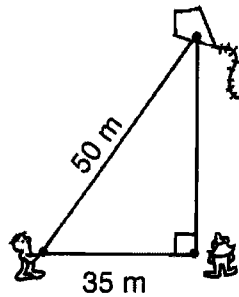
⑥ A quarterback at point A throws the football to a receiver who catches it at point B. How long was the pass?

B, 25 yd, A, 14 yd
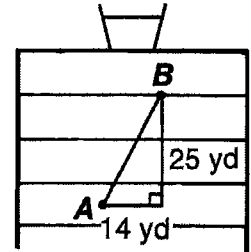
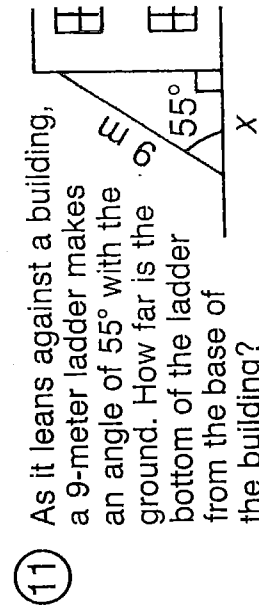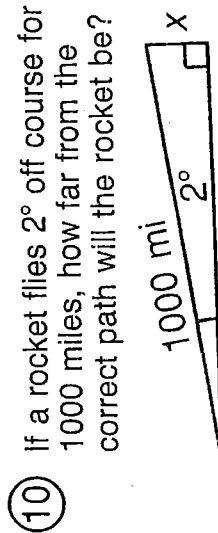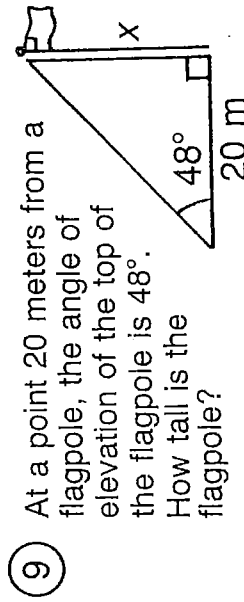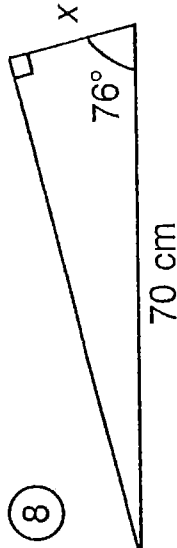④ A What is the height of this parallelogram?

B What is the area of the parallelogram?

15 m, ⊢9 m⊣⊢8 m⊣

⑦ From Canoeville it is 2.4 kilometers to White Beach and 3.0 kilometers to the Lodge. How far is it from White Beach across the lake to the Lodge?

LODGE, WHITE BEACH, CANOEVILLE

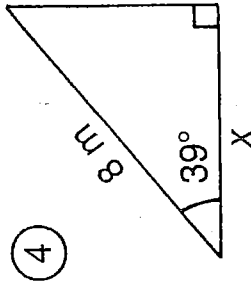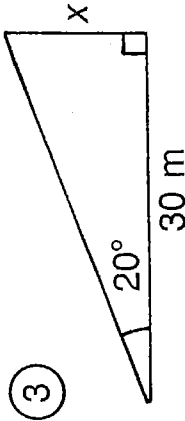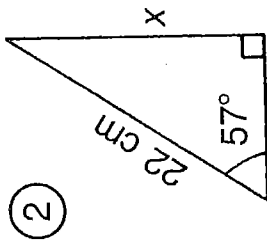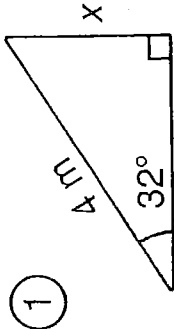| ST	IC	KW	QU	IT	UR	AT	GR
$\sqrt{821}$ yd $\doteq 28.7$ yd	$\sqrt{3.16}$ km $\doteq 1.78$ km	$\sqrt{144}$ m $= 12$ m	$\sqrt{136}$ m $\doteq 11.7$ m	$\sqrt{3.24}$ km $\doteq 1.8$ km	$\sqrt{842}$ yd $\doteq 29.0$ yd	$\sqrt{16200'}$ $\doteq 127'$	$\sqrt{95}$ m $\doteq 9.75$ m
AB	EA	TC	UT	ER	EA	LN	GT
234 m²	$\sqrt{105}$ m $\doteq 10.2$ m	$\sqrt{260'}$ $\doteq 16.1'$	$\sqrt{275'}$ $\doteq 16.6'$	204 m²	$\sqrt{1275}$ m $\doteq 35.7$ m	$\sqrt{1325}$ m $\doteq 36.4$ m	$\sqrt{40}$ $\doteq 6.32$ m

What Do They Call the Big Grass Field on an Orbiting Satellite?

For the first eight exercises, find the length x. For the remaining exercises, find the length needed to solve the problem. Round each answer to the nearest tenth. Cross out each box that contains a correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. triangle with 32°, side 4 m, x
2. triangle with 57°, side 22 cm, x
3. triangle with 20°, side 30 m, x
4. triangle with 39°, side 8 m, x
5. triangle with 61°, side 15 cm, x
6. triangle with 18°, side 200 m, x
7. triangle with 43°, side 5 m, x
8. triangle with 76°, side 70 cm, x

9. At a point 20 meters from a flagpole, the angle of elevation of the top of the flagpole is 48°. How tall is the flagpole? (48°, 20 m, x)

10. If a rocket flies 2° off course for 1000 miles, how far from the correct path will the rocket be? (1000 mi, 2°, x)

11. As it leans against a building, a 9-meter ladder makes an angle of 55° with the ground. How far is the bottom of the ladder from the base of the building? (9 m, 55°, x)

TH	AP	ET	E	AR	UN	A	KI	SS
4.7 m	5.4 m	5.2 m	2.1 m	23.5 m	6.2 m	22.2 m	28.7 mi	61.8 m
RU	NS	TO	P	UP	A	KY	NI	CE
18.5 cm	3.2 m	7.3 cm	63.6 m	34.9 mi	15.3 cm	10.9 m	16.9 cm	17.1 cm

OBJECTIVE 5–c: To use trigonometric ratios to find lengths of sides of right triangles.

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●DAFFYNITION DECODER●

EUROPE:

30°	42°	21°	24°	74°	2°	21°	24°	37°	49°	2°	42°	17°	32°	5°	2°

UNDERGROUND GARAGE:

| 46°	5°	9°	9°	28°	2°	42°	7°	46°	5°	9°	9°	7°	51°	5°	24°	68°	34°	2°

TO DECODE THE TWO DAFFYNITIONS ABOVE: For the first nine exercises, find the measure of the angle indicated. For the remaining exercises, find the angle measure needed to solve the problem. Round to the nearest degree. Each time the answer appears in the code, write the letter of the exercise below it.

(N) 5, 3

(U) 11, 4

(C) 8, 5

(O) 9, 10

(Y) 15, 13

(P) 50, 20

(W) 30, 21

(I) 45, 25

(A) 12, 1
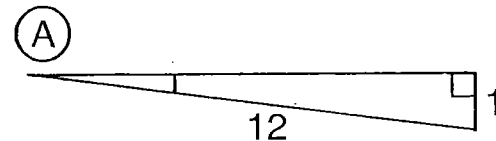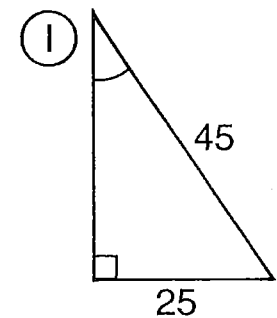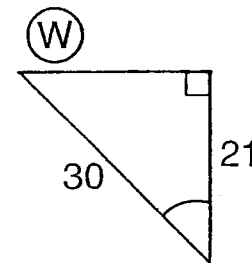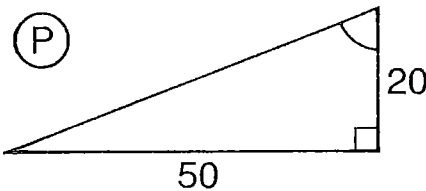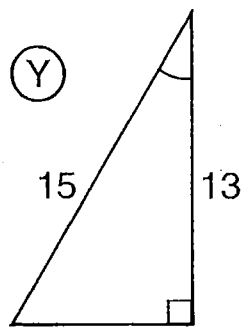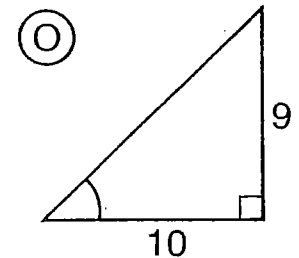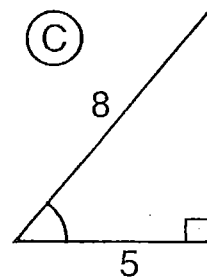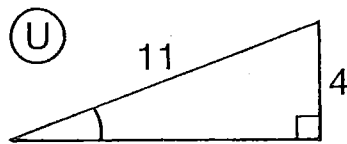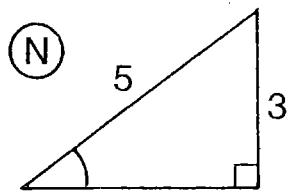
(L) A driveway is built on an incline so that it rises 3 m over a distance of 20 m. What is the angle of elevation of the driveway?
20, 3
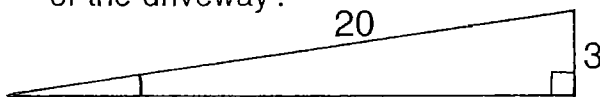
(R) Each step of a stairway rises 16 cm for a tread width of 36 cm. What angle does the stairway make with the floor?
36, 16
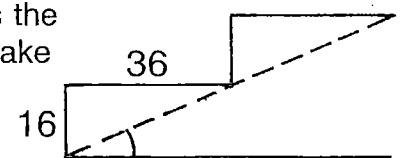
(B) A roof is constructed as shown in the diagram. Find the pitch (angle of elevation) of the roof.
10', 16'
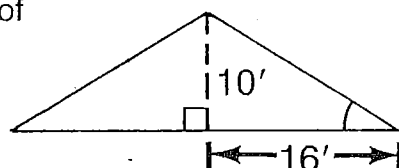
(T) A train decreases its altitude by 8 m when traveling along 200 m of track. Find the angle of depression of the track.
8, 200

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OBJECTIVE 5–d: To use trigonometric ratios to find measures of angles of right triangles.