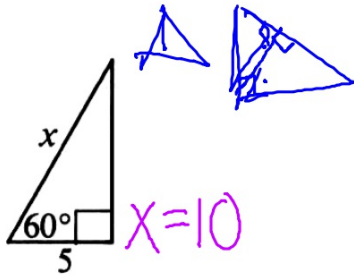
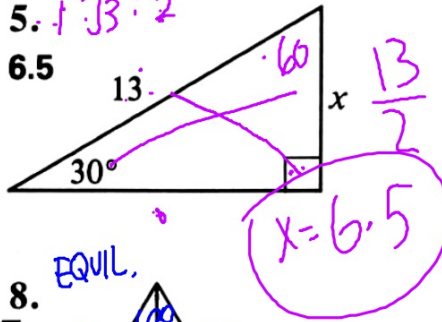


WARMUP

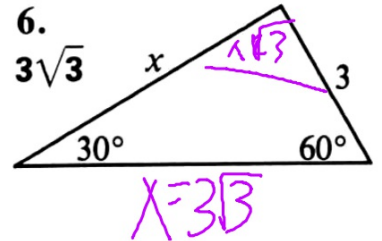
4.
10



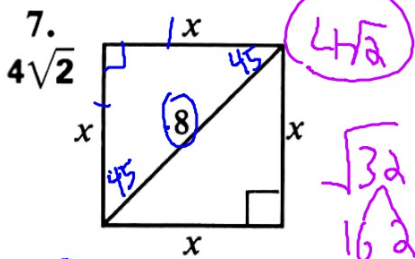
5. $1:\sqrt{3}:2$
6.5



6.



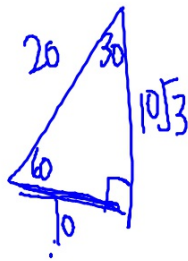
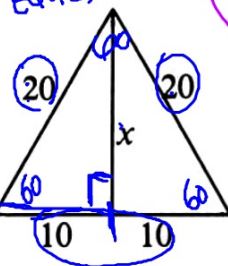
7.



$\frac{8\sqrt{2}}{\sqrt{2}\sqrt{2}}$
 $\frac{4\sqrt{2}}{2}$

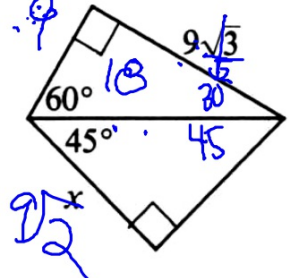
$x^2 + x^2 = 64$
 $2x^2 = 64$
 $x^2 = 32$
 $x = \sqrt{32}$

8.
 $10\sqrt{3}$



$20^2 = 10^2 + x^2$
 $400 = 100 + x^2$
 $300 = x^2$
 $\sqrt{300} = x$
 $10\sqrt{3}$

9.
 $9\sqrt{2}$

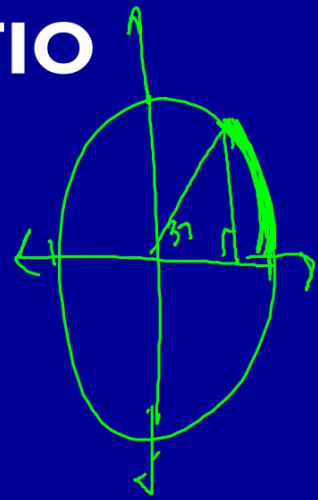
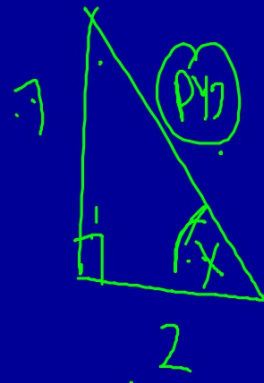


$\frac{18}{\sqrt{2}}$
 $\frac{18\sqrt{2}}{2}$
 $9\sqrt{2}$

SECTION 8.5: THE TANGENT RATIO

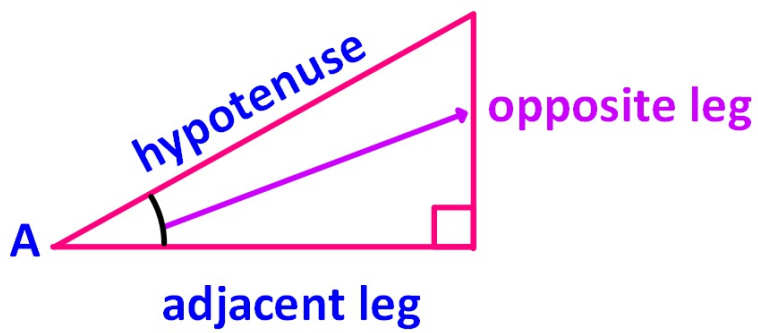
Standards:

$$\tan(x) = \frac{\text{opp}}{\text{adj}} = \frac{7}{2}$$



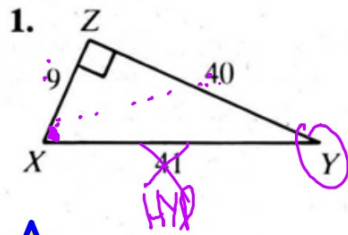
THE TANGENT RATIO

Right triangles only



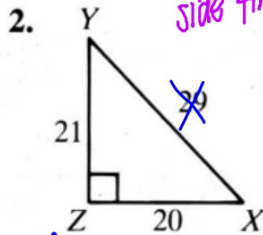
$$\tan(\text{angle } A) = \frac{\text{opp}}{\text{adj}}$$

Express $\tan X$ and $\tan Y$ as ratios.



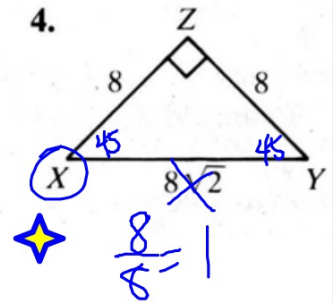
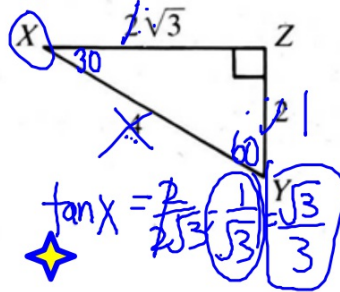
$$\tan X = \frac{40}{9} = 4.44 \quad \text{tan } 77^\circ$$

$$\tan Y = \frac{9}{40} = 0.225 = \text{tan } 13^\circ$$



$$\text{#2) } \tan X = \frac{21}{20} = 1.05 = 46^\circ$$

$$\tan Y = \frac{20}{21} = .952 \quad 44^\circ$$



$$\frac{8}{8} = 1$$

Angle	Sine	Cosine	Tangent	Angle	Sine	Cosine	Tangent
1°	.0175	.9998	.0175	46°	.7193	.6947	1.0355
2°	.0349	.9994	.0349	47°	.7314	.6820	1.0724
3°	.0523	.9986	.0524	48°	.7431	.6691	1.1106
4°	.0698	.9976	.0699	49°	.7547	.6561	1.1504
5°	.0872	.9962	.0875	50°	.7660	.6428	1.1918
6°	.1045	.9945	.1051	51°	.7771	.6293	1.2349
7°	.1219	.9925	.1228	52°	.7880	.6157	1.2799
8°	.1392	.9903	.1405	53°	.7986	.6018	1.3270
9°	.1564	.9877	.1584	54°	.8090	.5878	1.3764
10°	.1736	.9848	.1763	55°	.8192	.5736	1.4281
11°	.1908	.9816	.1944	56°	.8290	.5592	1.4826
12°	.2079	.9781	.2126	57°	.8387	.5446	1.5399
13°	.2250	.9744	.2309	58°	.8480	.5299	1.6003
14°	.2419	.9703	.2493	59°	.8572	.5150	1.6643
15°	.2588	.9659	.2679	60°	.8660	.5000	1.7321
16°	.2756	.9613	.2867	61°	.8746	.4848	1.8040
17°	.2924	.9563	.3057	62°	.8829	.4695	1.8807
18°	.3090	.9511	.3249	63°	.8910	.4540	1.9626
19°	.3256	.9455	.3443	64°	.8988	.4384	2.0503
20°	.3420	.9397	.3640	65°	.9063	.4226	2.1445
21°	.3584	.9336	.3839	66°	.9135	.4067	2.2460
22°	.3746	.9272	.4040	67°	.9205	.3907	2.3559
23°	.3907	.9205	.4245	68°	.9272	.3746	2.4751
24°	.4067	.9135	.4452	69°	.9336	.3584	2.6051
25°	.4226	.9063	.4663	70°	.9397	.3420	2.7475
26°	.4384	.8988	.4877	71°	.9455	.3256	2.9042
27°	.4540	.8910	.5095	72°	.9511	.3090	3.0777
28°	.4695	.8829	.5317	73°	.9563	.2924	3.2709
29°	.4848	.8746	.5543	74°	.9613	.2756	3.4874
30°	.5000	.8660	.5774	75°	.9659	.2588	3.7321
31°	.5150	.8572	.6009	76°	.9703	.2419	4.0108
32°	.5299	.8480	.6249	77°	.9744	.2250	4.3315
33°	.5446	.8387	.6494	78°	.9781	.2079	4.7046
34°	.5592	.8290	.6745	79°	.9816	.1908	5.1446
35°	.5736	.8192	.7002	80°	.9848	.1736	5.6713
36°	.5878	.8090	.7265	81°	.9877	.1564	6.3138
37°	.6018	.7986	.7536	82°	.9903	.1392	7.1154
38°	.6157	.7880	.7813	83°	.9925	.1219	8.1443
39°	.6293	.7771	.8098	84°	.9945	.1045	9.5144
40°	.6428	.7660	.8391	85°	.9962	.0872	11.4301
41°	.6561	.7547	.8693	86°	.9976	.0698	14.3007
42°	.6691	.7431	.9004	87°	.9986	.0523	19.0811
43°	.6820	.7314	.9325	88°	.9994	.0349	28.6363
44°	.6947	.7193	.9657	89°	.9998	.0175	57.2900
45°	.7071	.7071	1.0000				

1.05
1.09

Angle	Sine	Cosine	Tangent
1°	.0175	.9998	.0175
2°	.0349	.9994	.0349
3°	.0523	.9986	.0524
4°	.0698	.9976	.0699
5°	.0872	.9962	.0875
6°	.1045	.9945	.1051
7°	.1219	.9925	.1228
8°	.1392	.9903	.1405
9°	.1564	.9877	.1584
10°	.1736	.9848	.1763
11°	.1908	.9816	.1944
12°	.2079	.9781	.2126
13°	.2250	.9744	.2309
14°	.2419	.9703	.2493
15°	.2588	.9659	.2679

Complete. **0.2679**

5. $\tan 15^\circ \approx \underline{\quad}$



0.9325

6. $\tan 43^\circ \approx \underline{\quad}$



7.1154

7. $\tan 82^\circ \approx \underline{\quad}$



8. $\tan \underline{\quad} \approx 0.4663$

★ **25°**

9. $\tan \underline{\quad} \approx 1.5399$

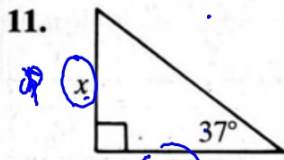
★ **57°**

10. $\tan \underline{\quad} \approx 2.7475$

★ **70°**

2nd \tan^{-1}
 \tan

Find the value of x to the nearest tenth.



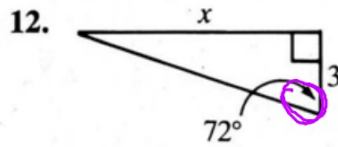
★ $x \approx 18.8$

$$\boxed{\tan 37} = \frac{x}{25}$$

(.7536)

$$25 \cdot (\tan 37) = x$$

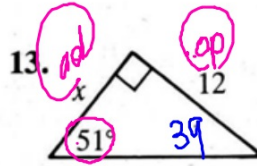
(.7536)



★ $x \approx 9.2$

$$\tan 72 = \frac{x}{3}$$

~~$$\frac{\tan x}{1} = \frac{x}{3}$$~~

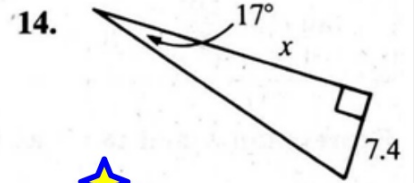


★ $x \approx 9.7$

~~$$\tan 51 = \frac{12}{x}$$~~

$$x \cdot (\tan 51) = 12$$

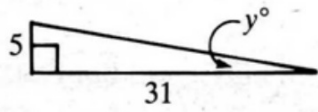
$$\frac{x}{\tan 51} = \frac{12}{\tan 51}$$



★ $x \approx 24.2$

Find y° correct to the nearest degree.

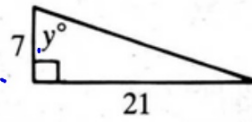
15.



✦ 9°

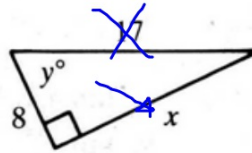
$$\tan y = \frac{5}{31}$$

16.



✦ 72°

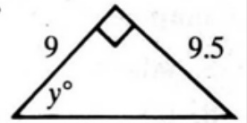
17.



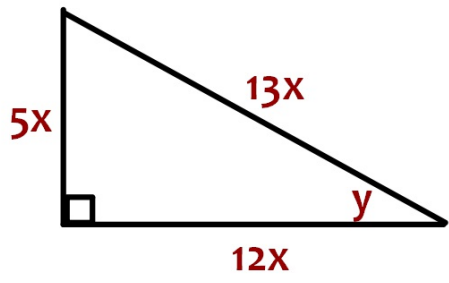
✦ 62°

$$\tan y = \frac{x}{8}$$

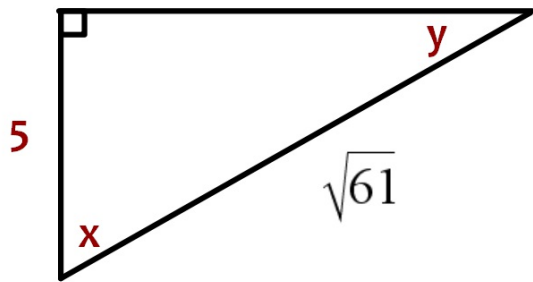
18.



✦ 47°

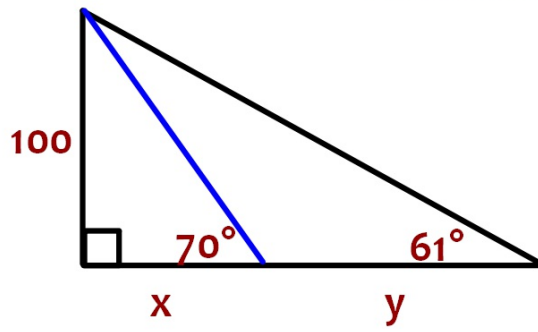


Find y

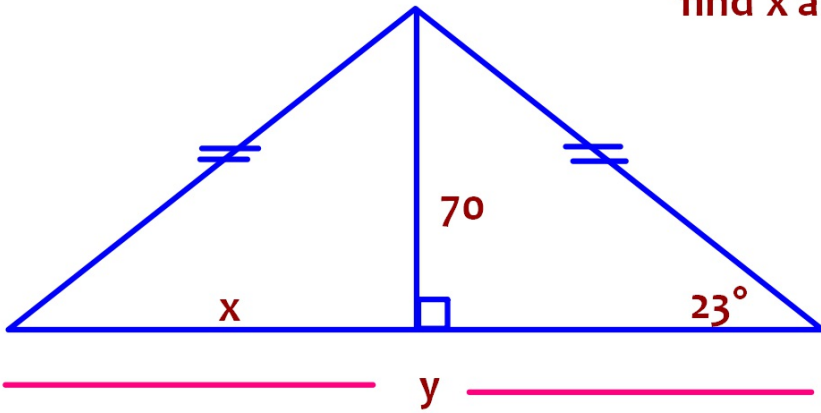


Find x and y

Find x and y



find x and y



HOMWORK

Assignment #8.5

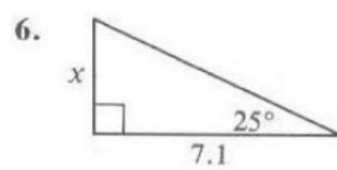
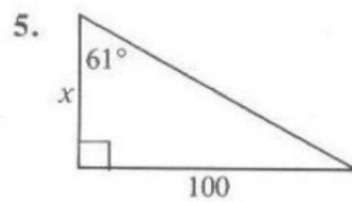
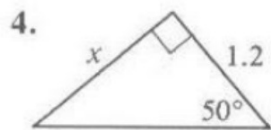
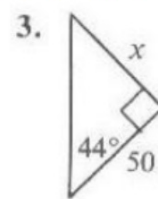
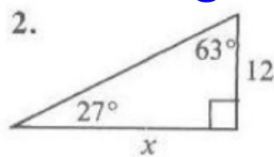
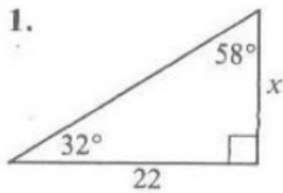
- Pages 308-309 #1-18, 21, 22, 24

****TUESDAY FEB 14th - QUIZ CH 8****

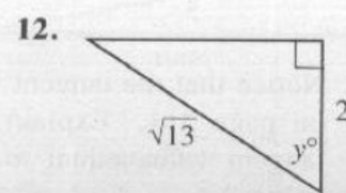
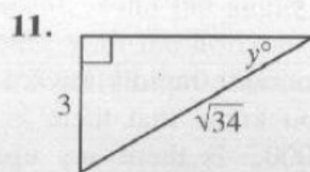
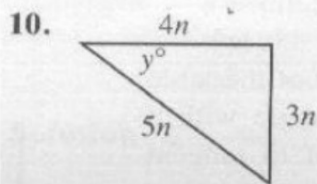
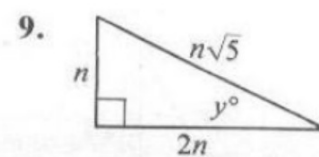
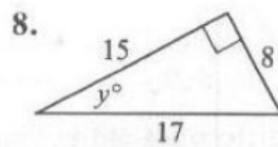
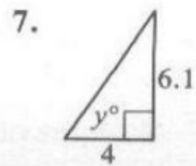
****THURSDAY FEB 16th - TEST CH 8****

Find the value of x to the nearest tenth. Use a calculator or the table on page 311.

Pages 308-309 #1-18, 21, 22, 24

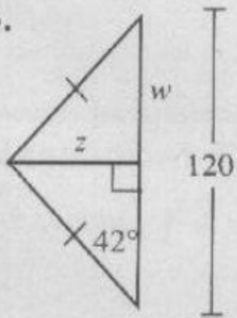


Find y° correct to the nearest degree.

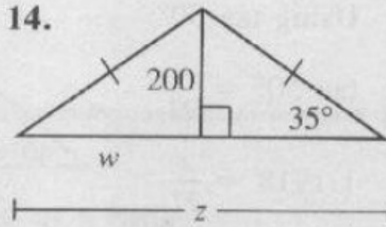


Find w , then z , correct to the nearest integer.

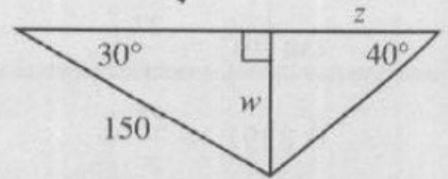
13.



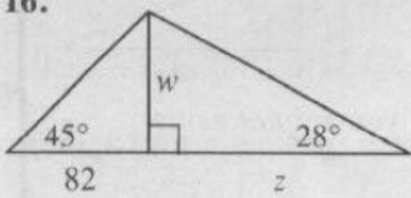
14.



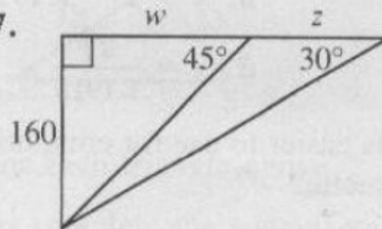
15.



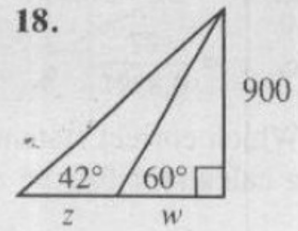
16.



17.



18.



21. The base of an isosceles triangle is 70 cm long. The altitude to the base is 75 cm long. Find, to the nearest degree, the base angles of the triangle.
22. A rhombus has diagonals of length 4 and 10. Find the angles of the rhombus to the nearest degree.
23. The shorter diagonal of a rhombus with a 70° angle is 122 cm long. How long, to the nearest centimeter, is the longer diagonal?
24. A rectangle is 80 cm long and 20 cm wide. Find, to the nearest degree, the acute angle formed at the intersection of the diagonals.

