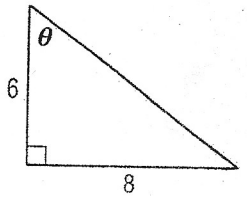
NAME _____ DATE _____ PERIOD _____

11.1A Homework

Trigonometric Functions in Right Triangles

Find the values of the six trigonometric functions for angle θ.

1.



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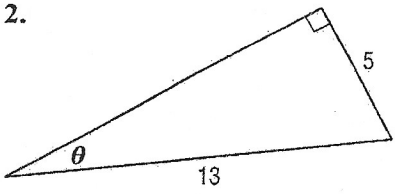

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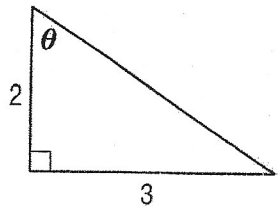


In a right triangle, $\angle A$ is acute.

4. If $\tan A = 3$, what is $\sin A$?

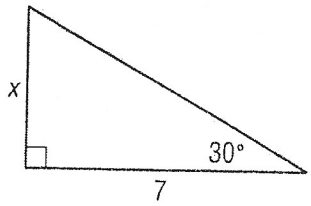
5. If $\sin A = \frac{1}{16}$, what is $\cos A$?

6. If $\tan A = 2$, what is $\cos A$?

7. If $\tan A = \frac{11}{17}$, what is $\csc A$?

Use a trigonometric function to find each value of x. Round to the nearest tenth if necessary.

8.



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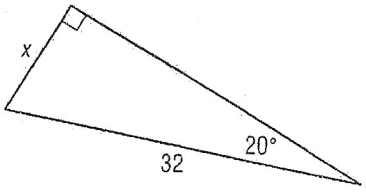

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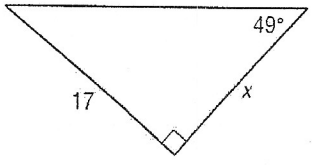

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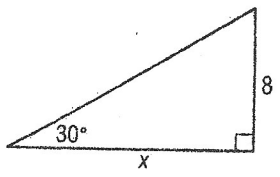
11.



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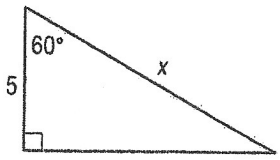

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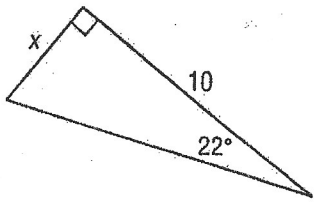

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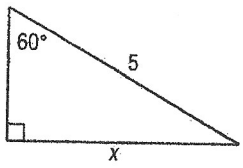

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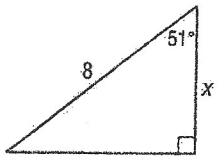

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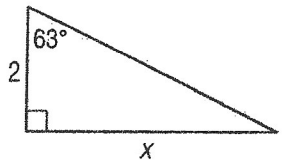
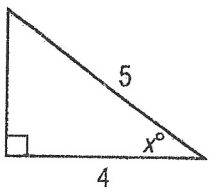


Find the value of *x*. Round to the nearest tenth if necessary.

17.



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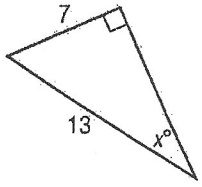

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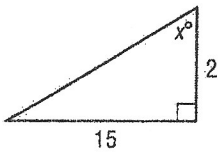
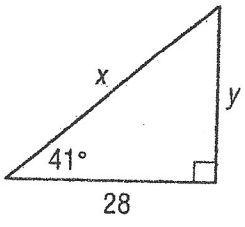


Use trigonometric functions to find the values of *x* and *y*. Round to the nearest tenth if necessary.

20.



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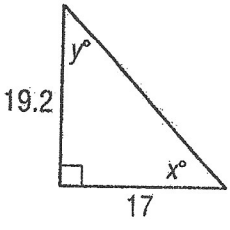

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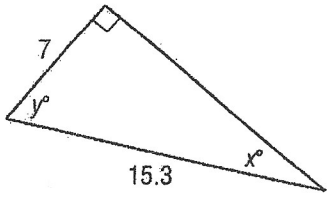

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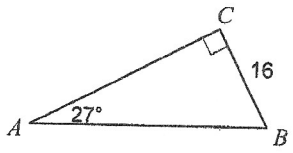
Solve each triangle. Round answers to the nearest tenth.

23)



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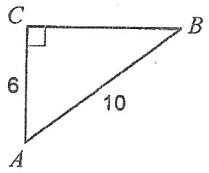

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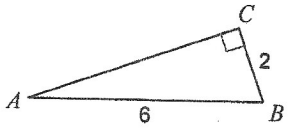

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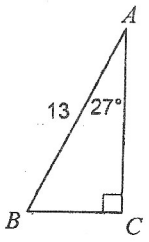

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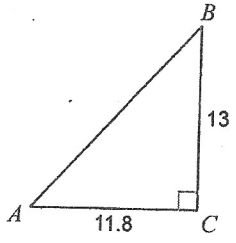

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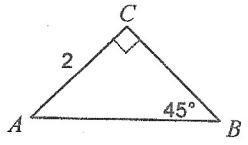

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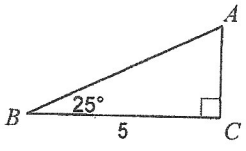

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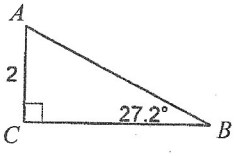

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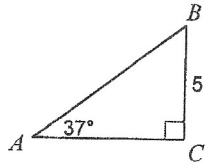

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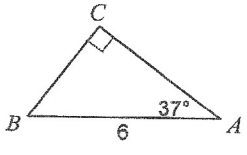


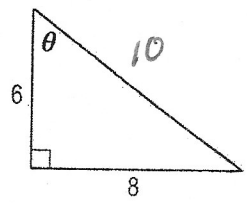
NAME _____ DATE _____ PERIOD _____

11.1A Homework

Trigonometric Functions in Right Triangles

Find the values of the six trigonometric functions for angle θ.

1.

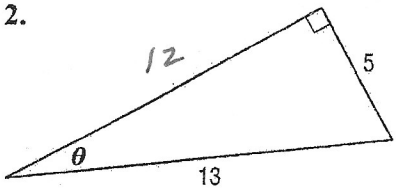


$\sin\theta = \frac{8}{10} = \frac{4}{5}$ $\csc\theta = \frac{5}{4}$

$\cos\theta = \frac{6}{10} = \frac{3}{5}$ $\sec\theta = \frac{5}{3}$

$\tan\theta = \frac{8}{6} = \frac{4}{3}$ $\cot\theta = \frac{3}{4}$

2.



$\sin\theta = \frac{5}{13}$ $\csc\theta = \frac{13}{5}$

$\cos\theta = \frac{12}{13}$ $\sec\theta = \frac{13}{12}$

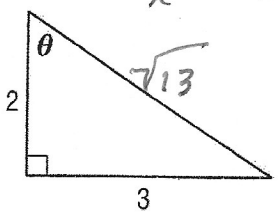
$\tan\theta = \frac{5}{12}$ $\cot\theta = \frac{12}{5}$

3.

$2^2 + 3^2 = x^2$

$x^2 = 13$

$x = \sqrt{13}$



$\sin\theta = \frac{3}{\sqrt{13}} = \frac{3\sqrt{13}}{13}$

$\cos\theta = \frac{2}{\sqrt{13}} = \frac{2\sqrt{13}}{13}$

$\tan\theta = \frac{3}{2}$

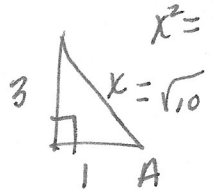
$\csc\theta = \sqrt{13}/3$ $\cot\theta = \frac{2}{3}$

$\sec\theta = \sqrt{13}/2$

In a right triangle, $\angle A$ is acute.

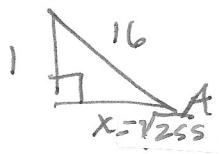
4. If $\tan A = 3$, what is $\sin A$?

$x^2 = 3^2 + 1^2 = 10$



$\sin A = \frac{3}{\sqrt{10}} = \frac{3\sqrt{10}}{10}$

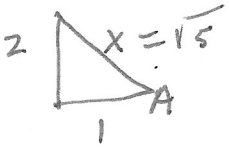
5. If $\sin A = \frac{1}{16}$, what is $\cos A$?



$\cos A = \frac{\sqrt{255}}{16}$

$x^2 + 1^2 = 16^2$ $x^2 = 255$

6. If $\tan A = 2$, what is $\cos A$?

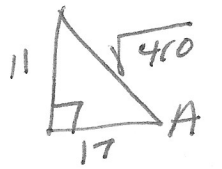


$\cos A = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$

$x^2 = 2^2 + 1^2$

$x^2 = 5$

7. If $\tan A = \frac{11}{17}$, what is $\csc A$?

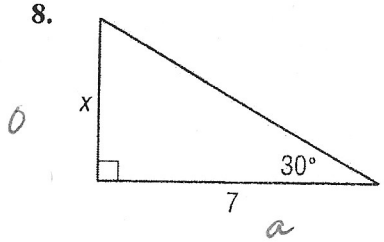


$\csc A = \frac{\sqrt{410}}{11}$

$x^2 = 11^2 + 17^2$

Use a trigonometric function to find each value of x. Round to the nearest tenth if necessary.

8.

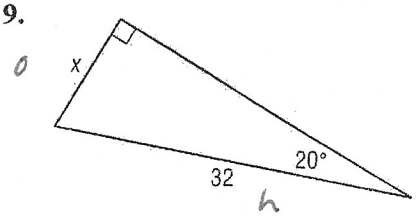


$\tan 30 = \frac{x}{7}$

$7 \cdot \tan 30 = x$

$x \approx 4.0$

9.

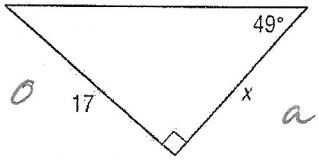


$\sin 20 = \frac{x}{32}$

$x = 32 \cdot \sin 20$

$x \approx 10.9$

10.



$\tan 49 = \frac{17}{a}$

$a \cdot \tan 49 = 17$

$a = \frac{17}{\tan 49}$

$a \approx 14.8$

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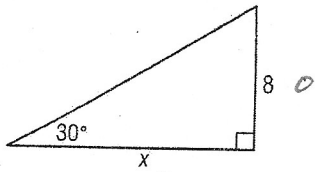
11.

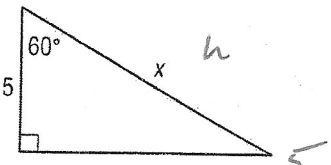


$\tan 30 = \frac{8}{x}$

$x \cdot \tan 30 = 8$

$x = \frac{8}{\tan 30} \approx 13.9$

12.

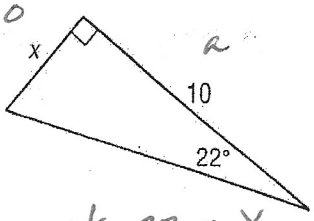


$\cos 60 = \frac{5}{h}$

$h \cdot \cos 60 = 5$

$h = \frac{5}{\cos 60} \approx 10$

13.

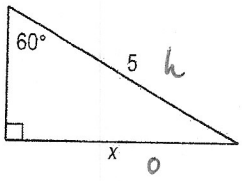


$\tan 22 = \frac{x}{10}$

$10 \cdot \tan 22 = x$

$x \approx 4.0$

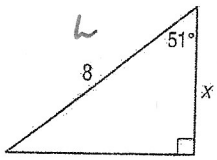
14.



$\sin 60 = \frac{x}{5}$

$x = 5 \cdot \sin 60 \approx 4.3$

15.

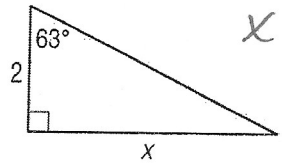


$\cos 51 = \frac{x}{8}$

$x = 8 \cdot \cos 51$

$x = 5.0$

16.



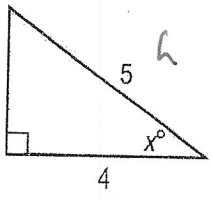
$\tan 63 = \frac{x}{2}$

$x = 2 \cdot \tan 63$

$x \approx 3.9$

Find the value of x. Round to the nearest tenth if necessary.

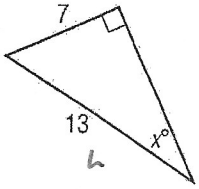
17.



$\cos x = \frac{4}{5}$

$x = \cos^{-1}\left(\frac{4}{5}\right) \approx 36.9°$

18.

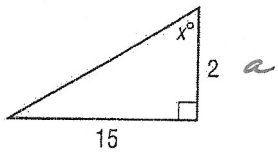


$\sin x = \frac{7}{13}$

$x = \sin^{-1}\left(\frac{7}{13}\right)$

$x \approx 32.6°$

19.



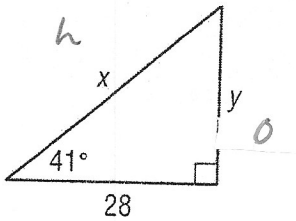
$\tan x = \frac{15}{2}$

$x = \tan^{-1}\left(\frac{15}{2}\right)$

$\approx 82.4°$

Use trigonometric functions to find the values of x and y. Round to the nearest tenth if necessary.

20.



Solve for x:

$\cos 41 = \frac{28}{x}$

$x \cdot \cos 41 = 28$

$x = \frac{28}{\cos 41} \approx 37.1$

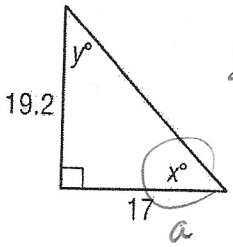
Solve for y:

$\tan 41 = \frac{y}{28}$

$y = 28 \cdot \tan 41$

$y = 24.3$

21.



Solve for x:

$\tan x = \frac{19.2}{17}$

$x \approx 48.5$

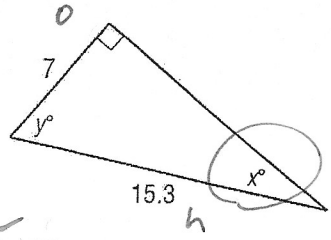
$x + y + 90 = 180$

$x + y = 90$

$48.5 + y = 90$

$y = 41.5°$

22.



$\sin x = \frac{7}{15.3}$

$x \approx 27.2$

$27.2 + y = 90$

$y = 62.8$

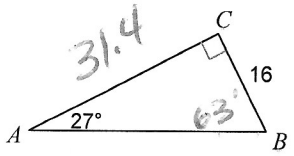
SM3 Name Key ID: 1

Section 11A

Date _____ Period ____

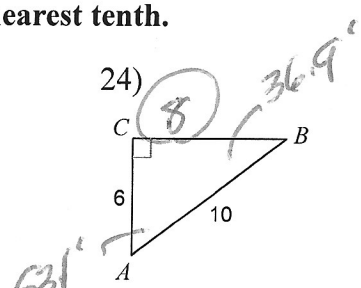
Solve each triangle. Round answers to the nearest tenth.

23)

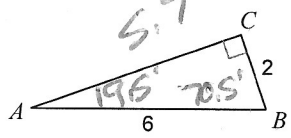


35.2

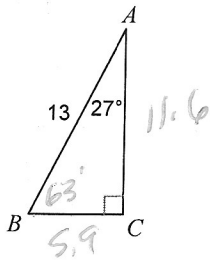
24)



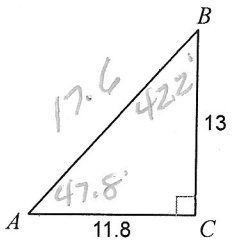
25)



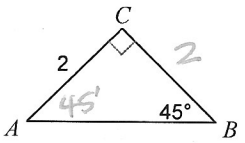
26)



27)

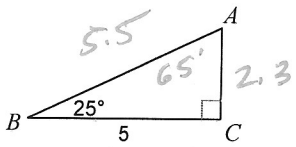


28)

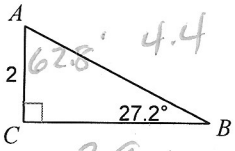


$2\sqrt{2} \approx 2.8$

29)

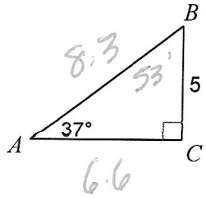


30)



3.9

31)



6.6

32)