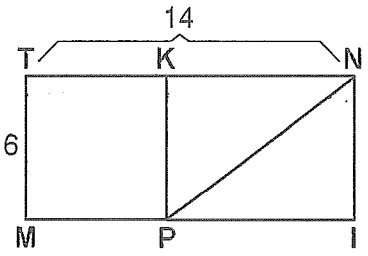
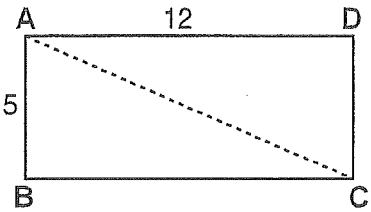
Name: _____ Per: ____ Ch. 6 Trig Sheet

1) In the accompanying diagram, MINT is a rectangle and MPKT is a square.



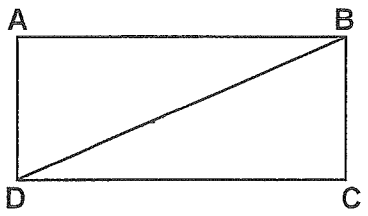
If MT = 6 and TN = 14, find PN.

2) In the accompanying diagram of rectangle ABCD, AD = 12 and AB = 5.



What is the length of diagonal $\overline{AC}$?

3) In the accompanying diagram, ABCD is a rectangle.



If DB = 26 and DC = 24, find BC.

4) If the length of each leg of an isosceles triangle is 17 and the base is 16, the length of the altitude to the base is

5) What is the length of the altitude of an equilateral triangle whose side has length 4?

6) Find, in simplest radical form, the length of a diagonal of a square whose side is 2.

7) In right triangle ABC, $m\angle C = 90^\circ$, AC = 6, and AB = 10. Find the perimeter of $\triangle ABC$.

8) If the diagonal of a square has a length of $4\sqrt{2}$, find the perimeter.

9) If the perimeter of a square is 8, which is the length of the diagonal?

10) In right triangle ABC, $\angle C$ is a right angle and $m\angle A = 30^\circ$. If AB = 20, find BC and AC.

11) Each base angle of an isosceles triangle has a measure of 30°. If the length of the base is 36, what is the height of the triangle?

12) The perimeter of an equilateral triangle is 12. What is the length of each altitude of the triangle?

13) If the sides of a right triangle are 8, 15, and 17, what is the tangent of the *smallest* angle?

14) The lengths of the sides of a triangle are 3, 4, and 5. What is the value of the sine of the *larger* acute angle of the triangle?

15) In right triangle ABC, if $m\angle C = 90^\circ$ and $\sin A = \frac{3}{5}$, cos B is equal to

16) Complete the following to make the sentence true:

$\sin 30^\circ = \cos$?

17) Complete the following to make the sentence true:

$\sin 75^\circ = \cos$?

18) Complete the following to make the sentence true:

$\cos 20^\circ = \sin$?

19) Complete the following to make the sentence true:

$\cos 80^\circ = \sin$?

20) Find the measure of $\angle A$ to the nearest degree if $\cos A = .9608$.

21) Find the measure of $\angle A$ to the nearest degree if $\sin A = .6933$.

22) If $\tan A = \frac{3}{4}$, find $m\angle A$ to the nearest degree.

23) In right triangle ABC, $m\angle C = 90^\circ$, hypotenuse AB = 10 and leg AC = 6. Find, to the nearest degree, the measure of $\angle A$.

24) The perimeter of a rhombus is 20 and the length of the shorter diagonal is 6. Find the measure of an acute angle of the rhombus to the nearest degree.

25) In isosceles $\triangle ABC$, AB = BC = 18 and $m\angle A = 58^\circ$. What is the length of the altitude to $\overline{AC}$?

26) A guy wire attached to the top of a pole reaches a stake in the ground 16 feet from the foot of the pole and makes an angle of 55° with the ground. What is the length of the wire to the nearest foot?

27) A television tower is 160 feet high and an observer is 120 feet from the base of the tower. Find, to the nearest degree, the angle of elevation of the top of the tower from the point of observation.

28) From the top of a lighthouse 140 feet high, the angle of depression of a boat out at sea is 22° What is the distance from the boat to the base of the lighthouse (at sea level) to the nearest foot?

calculator ok

Show work, draw diagrams

CLEARLY SHOW ALL STEPS ON A SEPARATE SHEET OF PAPER!!

Check #1-12

$2\sqrt{2}$
$2\sqrt{2}$
$2\sqrt{3}$
$2\sqrt{3}$
$6\sqrt{3}$
$10\sqrt{3}$
10
10
10
13
15
16
24

Check #13-28

$\frac{3}{5}$ $\frac{4}{5}$ $\frac{8}{15}$
10
15
15.3
16
28
37
44
53
53
60
70
74
347

HELPFUL HINTS:

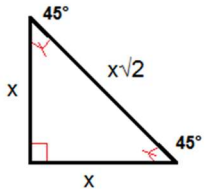
*Use degree mode.

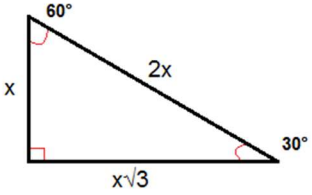
*Altitude is another name for the height of a figure.

*For #16-19, sketch a triangle with the given condition, find all angles, solve for missing value OR use pattern given in 6.2 notes/warm-up.

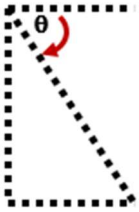
*Rhombus: a parallelogram with 4 equal sides, diagonals are perpendicular bisectors.

*Use special triangles when possible.
Write answers in root and fractional form!!





*Example of an
angle of depression:



angle of elevation: