

Snow Day Packet

ACT Prep

Mrs. Bossie

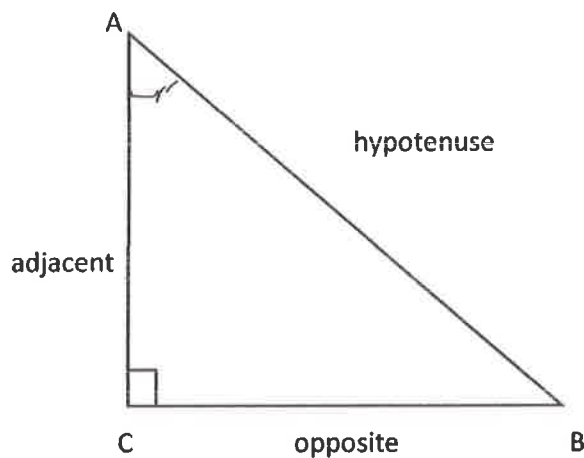
Day 1: Use the Angle Addition Postulate to find the missing measures. Remember, this is like the segment addition postulate. "The whole is equal to the sum of its parts."

Day 2: Simplifying Square Roots. For these problems, you will need to find the prime factors. For example, #1 $\sqrt{96}$. The prime factors of 96 are 2, 2, 2, 2, 3 or 16 (6). $\sqrt{16}\sqrt{6}$ is $4\sqrt{6}$. Complete all 24 problems.

Day 3: Find the equation of a circle. Complete the worksheet

Day 4. Find the trigonometric ratios

Day 5 Special Right Triangles



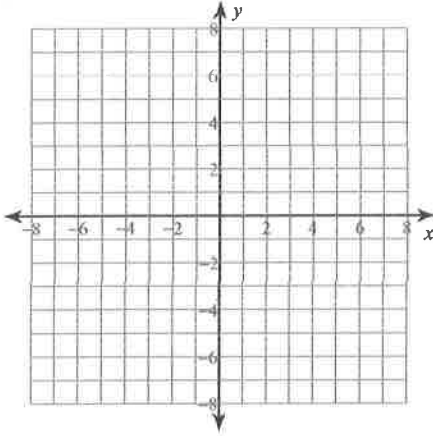
This illustration is for Sin A.

$\sin \theta = \text{opposite/hypotenuse}$	$\csc \theta = \text{hypotenuse/opposite}$
$\cos \theta = \text{adjacent/hypotenuse}$	$\sec \theta = \text{hypotenuse/adjacent}$
$\tan \theta = \text{opposite /adjacent}$	$\cot \theta = \text{adjacent/opposite}$

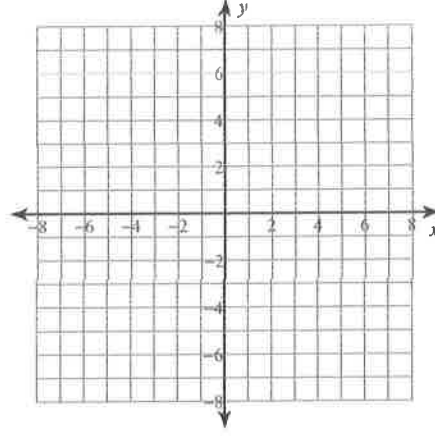
Equations of Circles

Identify the center and radius of each. Then sketch the graph.

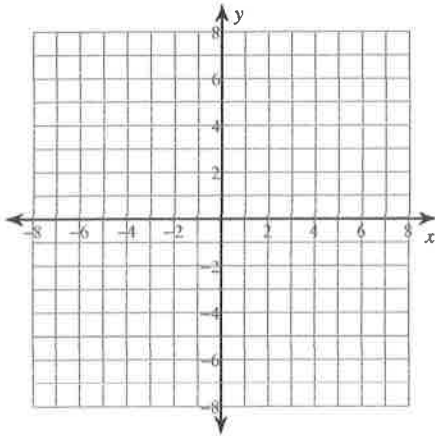
1) $(x - 1)^2 + (y + 3)^2 = 4$



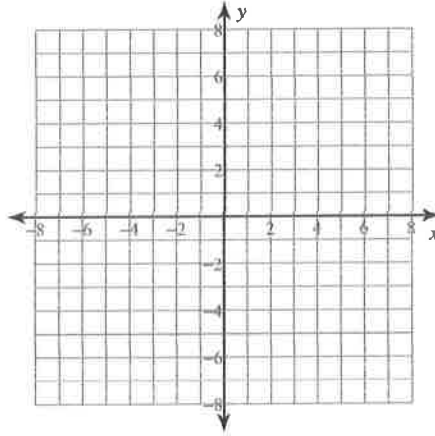
2) $(x - 2)^2 + (y + 1)^2 = 16$



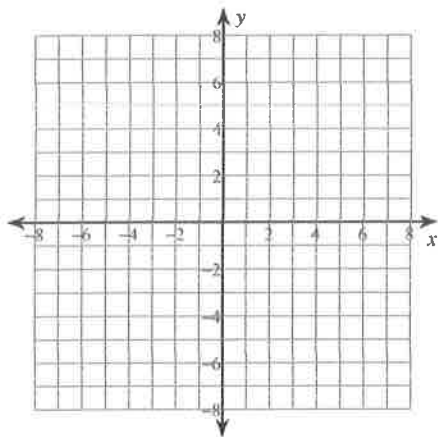
3) $(x - 1)^2 + (y + 4)^2 = 9$



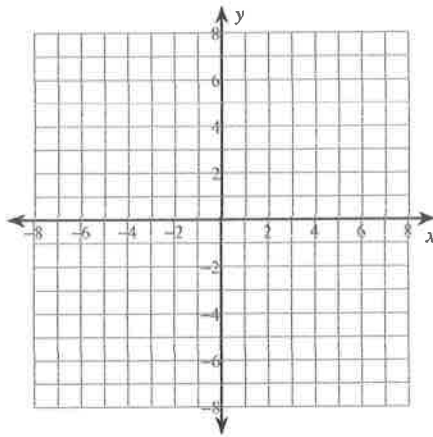
4) $x^2 + (y - 3)^2 = 14$



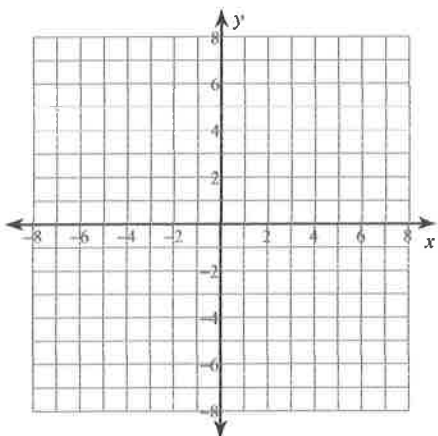
5) $y^2 + 4x - 20 - 2y = -x^2$



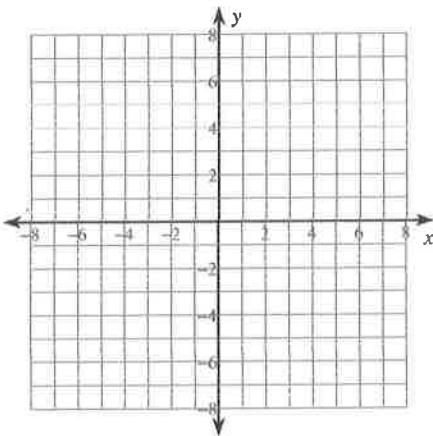
6) $-9 = -y^2 - x^2$



7) $9 = 2y - y^2 - 6x - x^2$



8) $16 + x^2 + y^2 - 8x - 6y = 0$



Use the information provided to write the equation of each circle.

9) Center: $(13, -13)$
 Radius: 4

10) Center: $(-13, -16)$
 Point on Circle: $(-10, -16)$

11) Ends of a diameter: $(18, -13)$ and $(4, -3)$

12) Center: $(10, -14)$
 Tangent to $x = 13$

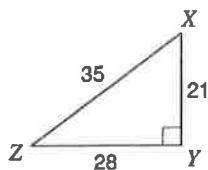
13) Center lies in the first quadrant
 Tangent to $x = 8$, $y = 3$, and $x = 14$

14) Center: $(0, 13)$
 Area: 25π

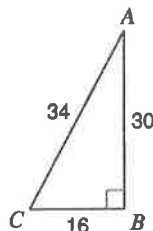
Trigonometric Ratios

Find the value of each trigonometric ratio.

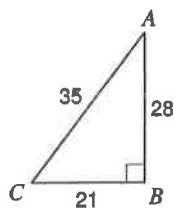
1) $\tan Z$



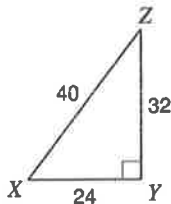
2) $\cos C$



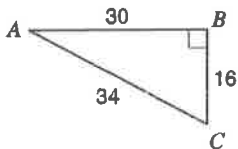
3) $\sin C$



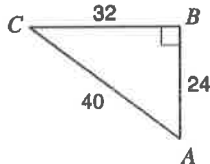
4) $\tan X$



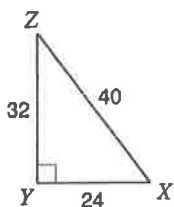
5) $\cos A$



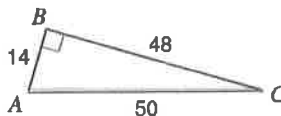
6) $\sin A$



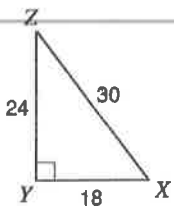
7) $\sin Z$



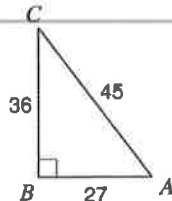
8) $\sin C$



9) $\cos Z$

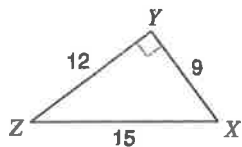


10) $\tan C$

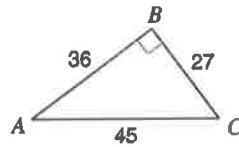


Find the value of each trigonometric ratio to the nearest ten-thousandth.

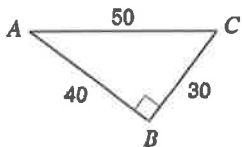
11) $\cos Z$



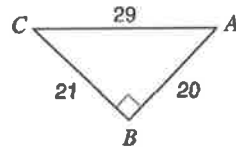
12) $\cos C$



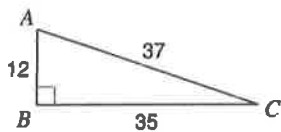
13) $\tan C$



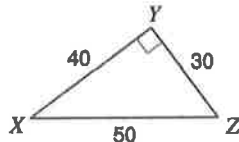
14) $\tan A$



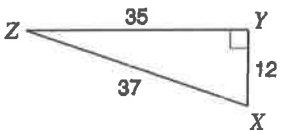
15) $\tan C$



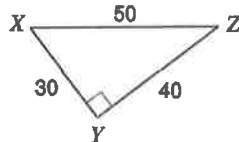
16) $\tan X$



17) $\sin Z$



18) $\sin Z$



19) $\sin 48^\circ$

20) $\sin 38^\circ$

21) $\cos 61^\circ$

22) $\cos 51^\circ$

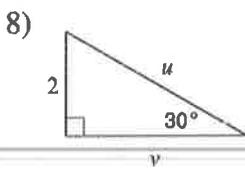
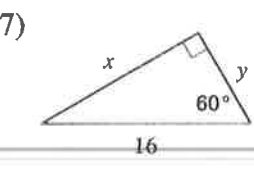
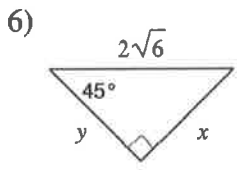
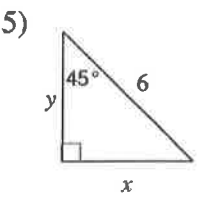
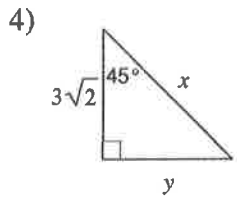
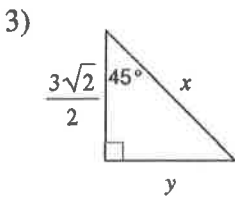
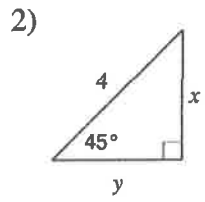
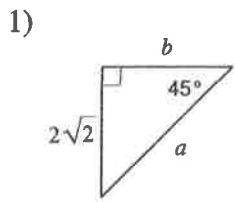
Critical thinking questions:

23) Can the sine of an angle ever equal 2?
Why or why not?

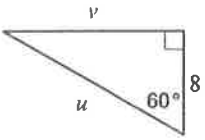
24) $\sin x = \frac{1}{3}$
Find $\cos x$.

Special Right Triangles

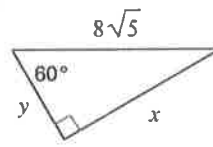
Find the missing side lengths. Leave your answers as radicals in simplest form.



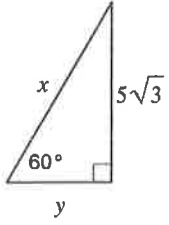
9)



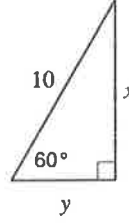
10)



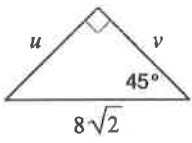
11)



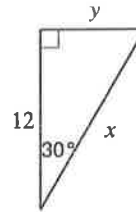
12)



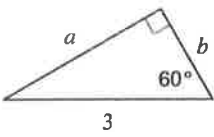
13)



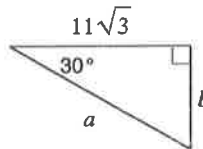
14)



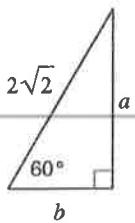
15)



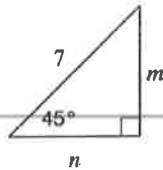
16)



17)

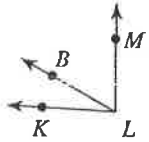


18)

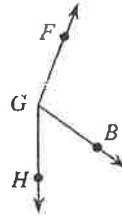


The Angle Addition Postulate

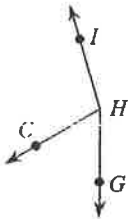
- 1) Find $m\angle KLM$ if $m\angle KLB = 26^\circ$
and $m\angle BLM = 60^\circ$.



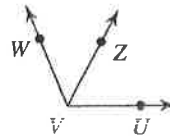
- 2) Find $m\angle FGH$ if $m\angle FGB = 105^\circ$
and $m\angle BGH = 54^\circ$.



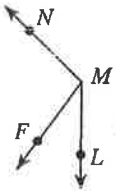
- 3) $m\angle GHC = 60^\circ$ and $m\angle CHI = 104^\circ$.
Find $m\angle GHI$.



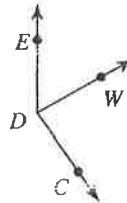
- 4) Find $m\angle WVU$ if $m\angle ZVU = 62^\circ$
and $m\angle WVZ = 50^\circ$.



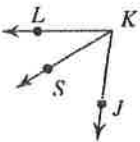
- 5) $m\angle FMN = 99^\circ$ and $m\angle LMF = 36^\circ$.
Find $m\angle LMN$.



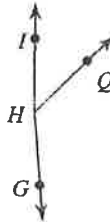
- 6) Find $m\angle WDC$ if $m\angle EDC = 145^\circ$
and $m\angle EDW = 61^\circ$.



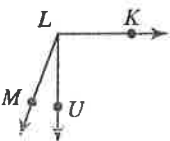
- 7) Find $m\angle JKL$ if $m\angle SKL = 31^\circ$
and $m\angle JKS = 52^\circ$.



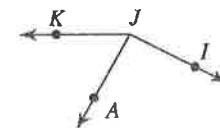
- 8) Find $m\angle IHQ$ if $m\angle IHG = 176^\circ$
and $m\angle QHG = 130^\circ$.



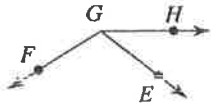
- 9) Find $m\angle KLU$ if $m\angle ULM = 20^\circ$
and $m\angle KLM = 110^\circ$.



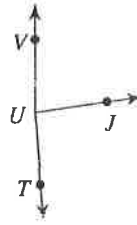
- 10) Find $m\angle IJA$ if $m\angle AJK = 61^\circ$
and $m\angle IJK = 153^\circ$.



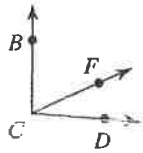
- 11) $m\angle HGF = 16x + 4$, $m\angle EGF = 110^\circ$,
and $m\angle HGE = 3x + 11$. Find x .



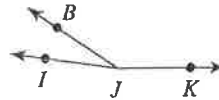
- 12) $m\angle VUT = 175^\circ$, $m\angle VUJ = 17x - 3$,
and $m\angle JUT = 17x + 8$. Find x .



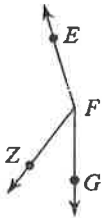
- 13) $m\angle FCD = x + 41$, $m\angle BCF = x + 78$,
and $m\angle BCD = 95^\circ$. Find x .



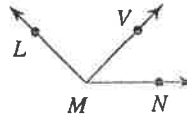
- 14) Find x if $m\angle BJK = 146 + 2x$,
 $m\angle IJK = 172^\circ$, and $m\angle IJB = 2x + 26$.



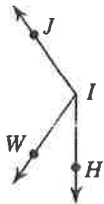
- 15) $m\angle GFZ = 38^\circ$, $m\angle ZFE = 2x + 125$,
and $m\angle GFE = x + 163$. Find x .



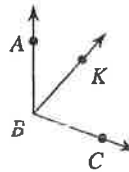
- 16) Find x if $m\angle LMN = 135^\circ$,
 $m\angle LMV = -1 + 45x$, and $m\angle VMN = 23x$.



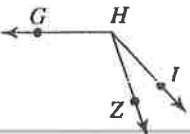
- 17) Find $m\angle HIW$ if $m\angle WIJ = 10x$,
 $m\angle HIJ = 145^\circ$, and $m\angle HIW = 2x + 13$.



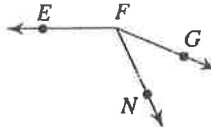
- 18) $m\angle ABC = 17x + 8$, $m\angle ABK = 42^\circ$,
and $m\angle KBC = 12x - 4$. Find $m\angle ABC$.



- 19) $m\angle ZHG = 11x - 1$, $m\angle IHZ = 24^\circ$,
and $m\angle IHG = 12x + 13$. Find $m\angle IHG$.



- 20) $m\angle GFN = 4x + 10$, $m\angle NFE = 14x + 3$,
and $m\angle GFE = 157^\circ$. Find $m\angle NFE$.



Simplifying Square Roots

Simplify.

1) $\sqrt{96}$

2) $\sqrt{216}$

3) $\sqrt{98}$

4) $\sqrt{18}$

5) $\sqrt{72}$

6) $\sqrt{144}$

7) $\sqrt{45}$

8) $\sqrt{175}$

9) $\sqrt{343}$

10) $\sqrt{12}$

11) $10\sqrt{96}$

12) $9\sqrt{245}$

13) $7\sqrt{600}$

14) $5\sqrt{45}$

15) $5\sqrt{180}$

16) $3\sqrt{405}$

17) $2\sqrt{36}$

18) $9\sqrt{125}$

19) $8\sqrt{27}$

20) $12\sqrt{1764}$

21) $3\sqrt{900}$

22) $7\sqrt{2535}$

23) $11\sqrt{1215}$

24) $2\sqrt{200}$