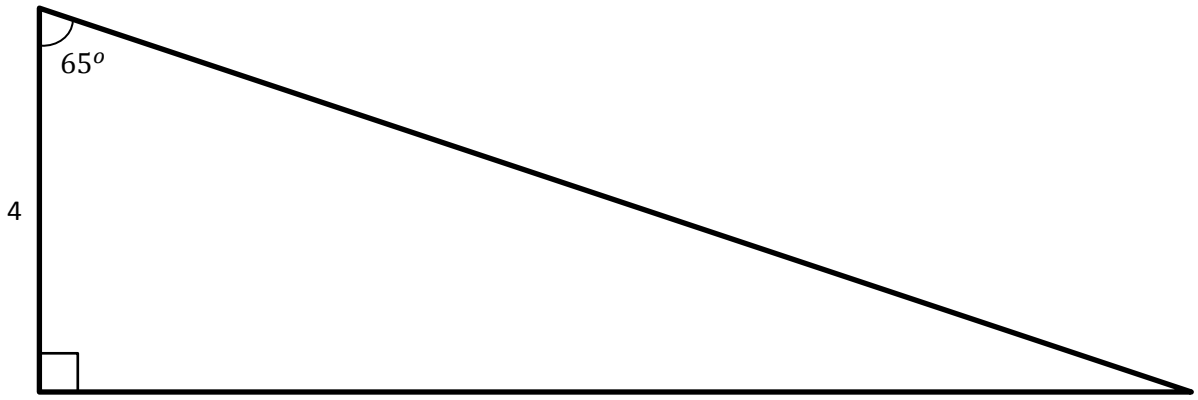
Name_____ Trigonometry, Test 1

Calculator Portion: You may use a calculator on this page.

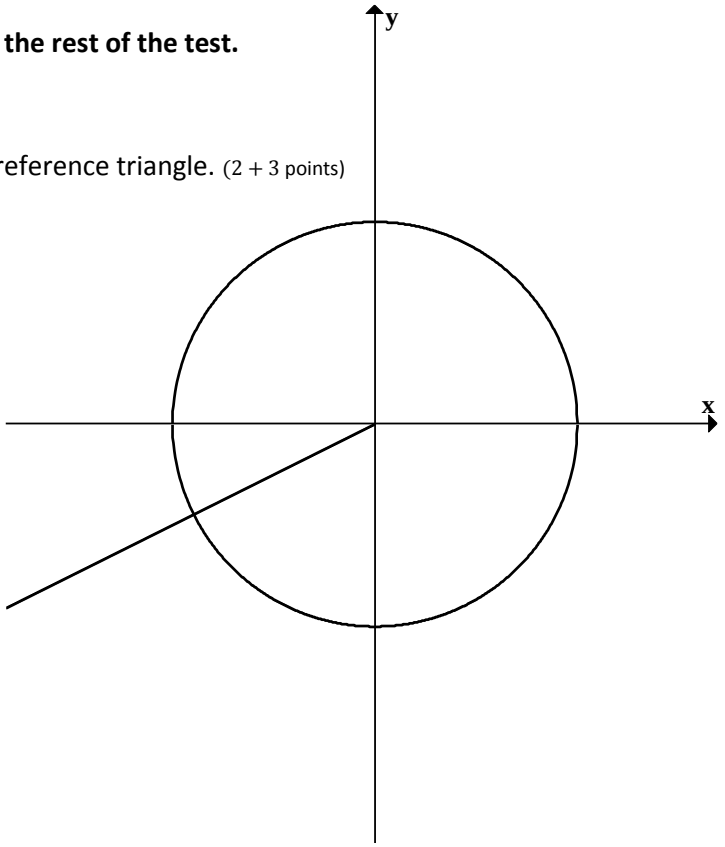
1) Solve the following triangle. (10 points)



2) A 100-ft guy wire is attached to the top of an 88-ft antenna. What angle does the wire make with the ground? (Picture/diagram: 4 points. Answer: 3 points. Supporting work: 3 points)

Non-Calculator Portion: You may not use a calculator on the rest of the test.

3) In the figure to the right, draw the standard angle and reference triangle. (2 + 3 points)

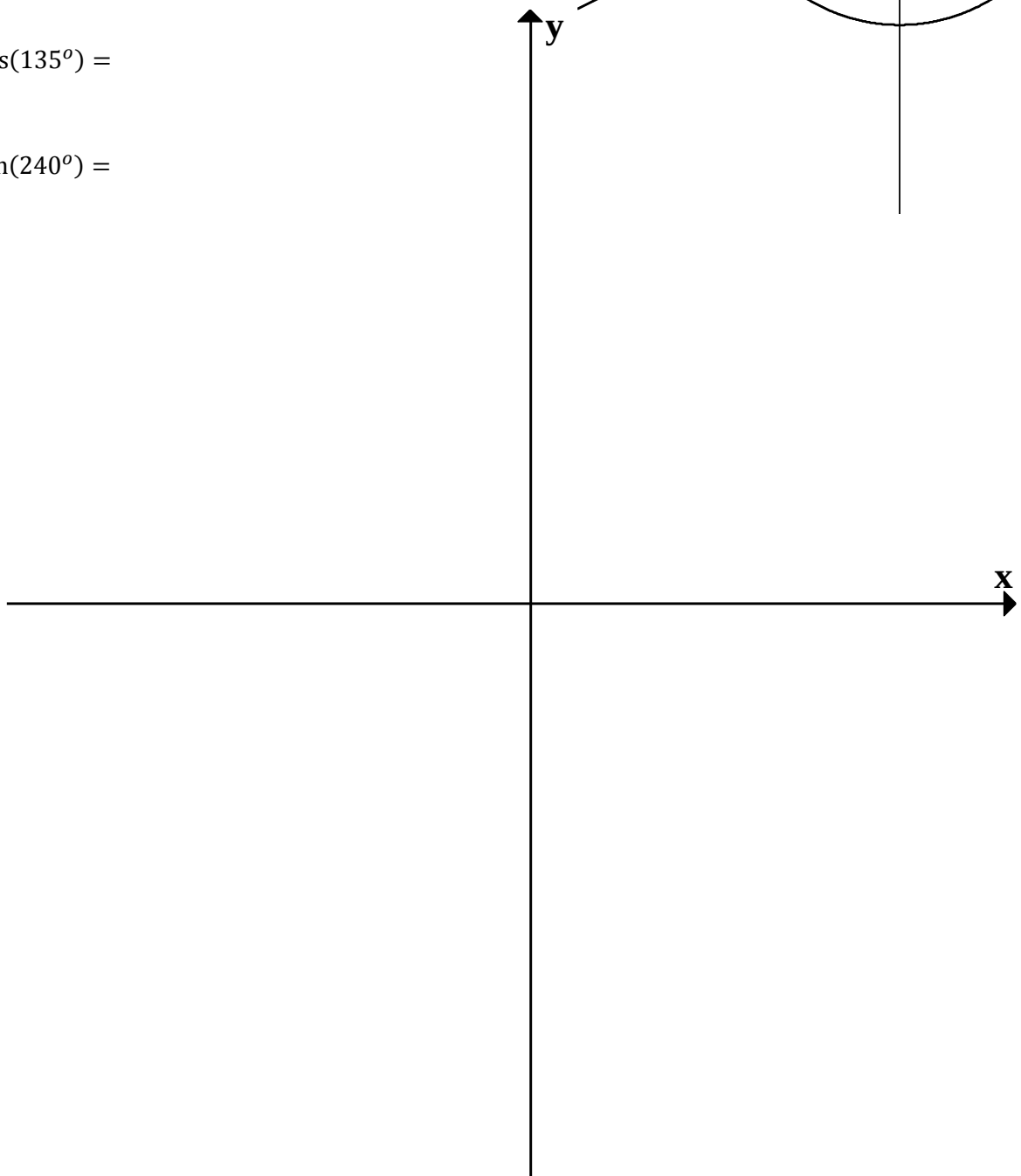


4) Find each of the following. Use the axis below to illustrate your supporting work.
(15 points total: 1 point per answer, 4 points per work)

$\sin(30^o) =$

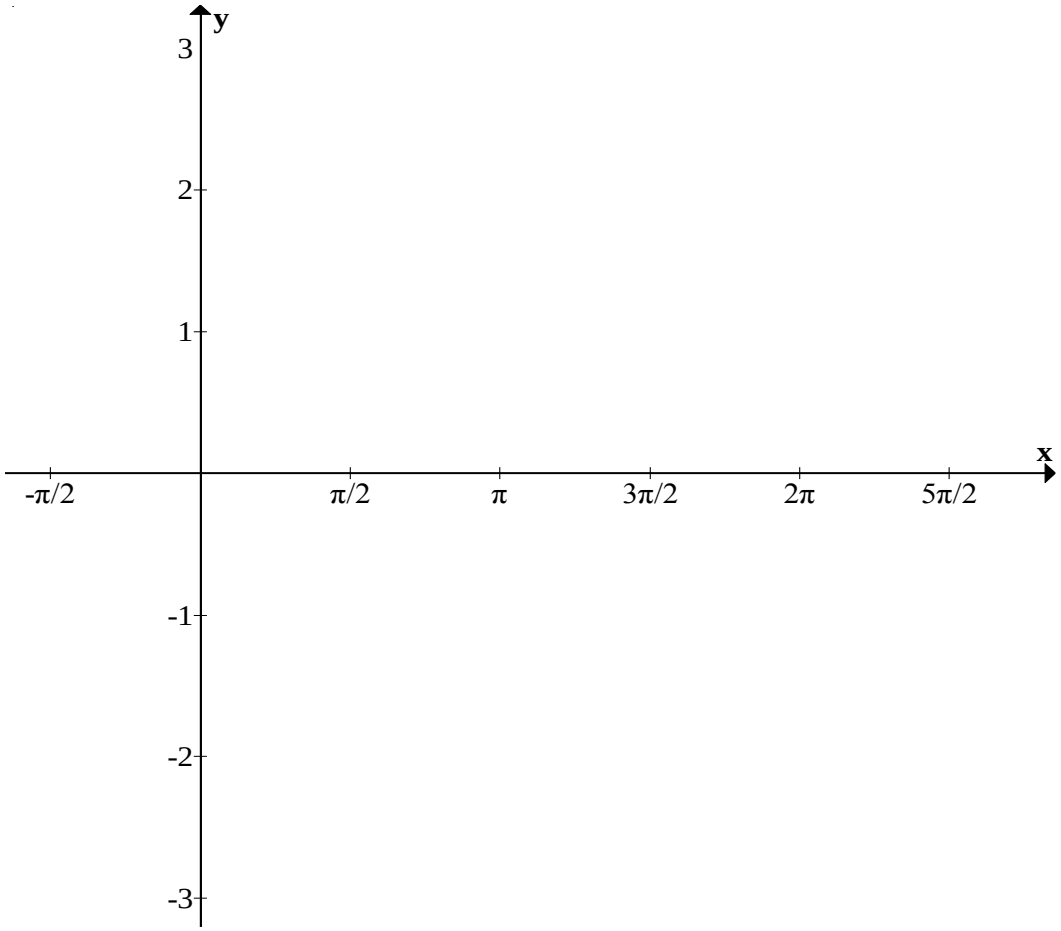
$\cos(135^o) =$

$\tan(240^o) =$



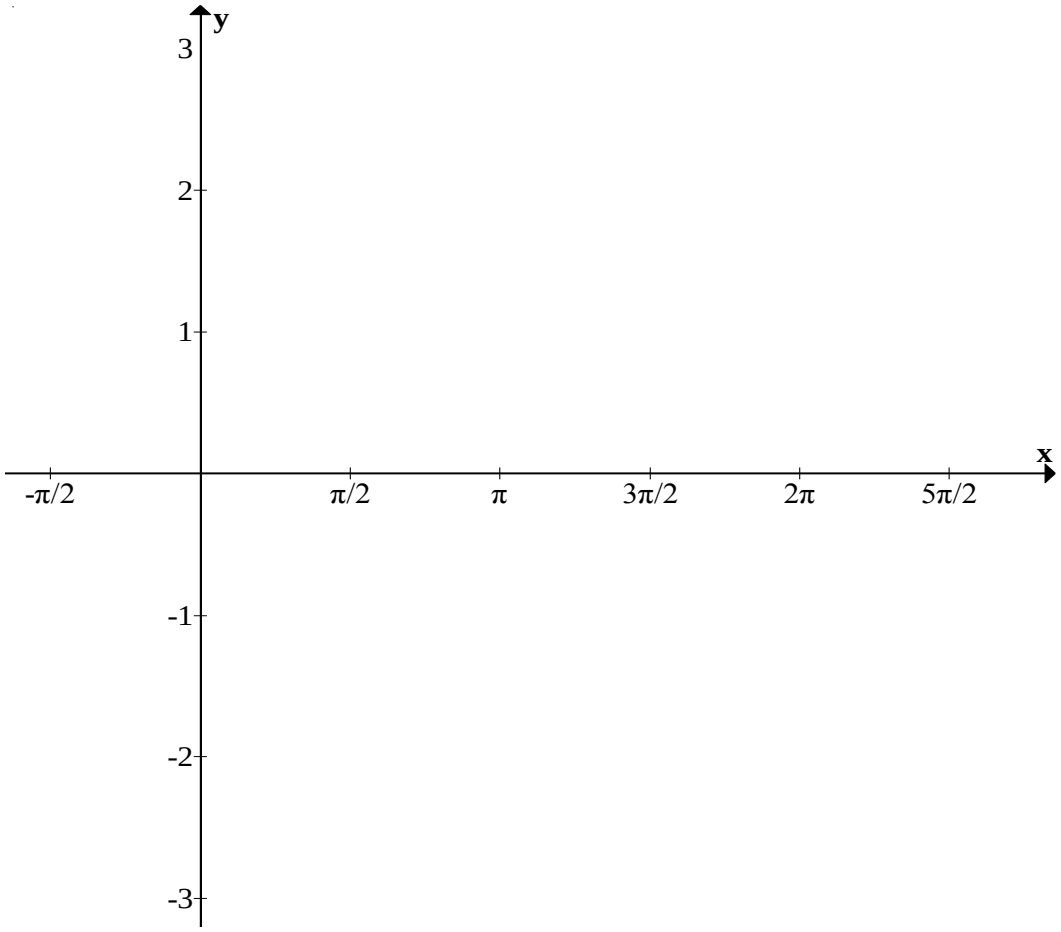
5) A wagon wheel has a 8 spokes. The arc length of the wheel between spokes is 12 inches. Draw a diagram and find the radius of the wheel. (5 points for the diagram, 5 points for the radius)

6) On the axis below, graph the function $y = \cos\left(x - \frac{\pi}{2}\right)$. (10 points)



7) It is known that $\sin(\theta) = \frac{1}{2}$. Find $\cos(\theta)$. Show your work. (4+6 points)

8) On the axis below, sketch the function $y = 2\sin\big(4(x + 2\pi)\big) + 1$. (10 points)



9) Assume $\sin(53^o) = \frac{4}{5}$. Find $\sin(127^o)$. Show your work. (3+7 points)

10) Assume $\sin(53^o) = \frac{4}{5}$. Find $\sin(143^o)$. Show your work. (3+7 points)