LAB 05 QUESTIONS

QUESTION 1

Open the interactive geometry web page.
Let angle CAD be represented symbolically as θ. What is angle C'A'D' ?

- ○ - θ
- ○ θ+45
- ○ θ + 90º
- ○ 2 θ

QUESTION 2

Match the small-dotted cyan, dashed magenta,
big-dotted yellow, and solid green
lines with the appropriate trig functions.

[▼]	small-dotted cyan	A. sin 2 θ
[▼]	dashed magenta	B. sin θ
[▼]	big-dotted yellow	C. cos θ
[▼]	solid green	D. cos 2 θ

QUESTION 3

1. Drag the point D around the circle once, back to its original position, and note what happens.

   - ○ angle C'A'D' goes through one revolution, angle CAD goes through 2 revolutions
   - ○ angle CAD goes through one revolution, angle C'A'D' goes through 2 revolutions
   - ○ angle CAD spins and spins
   - ○ angle CAD goes through half a revolution, angle C'A'D' goes through one revolution
   - ○ angle CAD goes through one revolution, angle C'A'D' goes through half a revolution

QUESTION 4

1. What is the period of the function y=cos(2x) ?

   - ○ π/2

○ π
○ 2 π
○ 4 π

1 points

QUESTION 5

1. Open the Exam-grapher application. Use it to graph cos(2*x). Now zoom in to find the x coordinate of the smallest positive x intercept. Answer accurate to three decimal places (nearest thousandth).

1 points

QUESTION 6

1. Refresh the grapher's display and plot $\cos(x)^2$ (the syntax for the grapher is cos(x)^2). What is the period of $\cos(x)^2$?
   ○ π /2
   ○ π
   ○ 2 π
   ○ 4 π

1 points

QUESTION 7

1. Now plot $\cos(x)^2 - \sin(x)^2$ in the other color (so, if you graphed the function in the previous question as f(x), graph this one as g(x)). What fact about the new graph supports the fact that $\cos(2x) = \cos(x)^2 - \sin(x)^2$ is a trig identity?
   ○ The graph is identically 0
   ○ The graph is identically 1
   ○ The graph coincides with the graph of sin(2x)
   ○ The graph coincides with the graph of cos(2x)
   ○ The graph matches the graph of (cos(x)-sin(x))(cos(x)+sin(x))

1 points

QUESTION 8

1. What right hand side f(x) makes $(\cos x)^2 (1 + (\tan x)^2) = f(x)$ an identity?
   ○ -1
   ○ 0
   ○ 1

○ $(\sin x)^2$

○ $(\cot x)^2$

QUESTION 9

1. What right hand side f(x) makes $\sin(\pi/2 + x) = f(x)$ an identity? (Remember the graphing utility uses Pi, not pi.)

○ sin x

○ - sin x

○ cos x

○ -cos x

○ $\pi/2 + \sin x$

○ $\pi/2 + \cos x$

QUESTION 10

1. What right hand side $f(x)$ makes $1 - (\cos x)^2/(1 + \sin x) = f(x)$ an identity?

○ -1

○ 0

○ 1

○ sin x

○ cos x

○ -sin x

○ -cos x

QUESTION 11

1. What right hand side $f(x)$ makes $(\cos x)^4 - (\sin x)^4 = f(x)$ an identity?

○ sin x

○ cos x

○ sin x/2

○ cos x/2

○ sin 2x

○ cos 2x

QUESTION 12

1. For *a* between -10 and 10 there are three values of *a* in the list below for which sin x = cos (x - a). What are they?

   ☐ -7.28

   ☐ -4.66

   ☐ -2.72

   ☐ 1.553

   ☐ 1.784

   ☐ 3.143

   ☐ 6.286

   ☐ 7.864