

## TRIGONOMETRY HOMEWORK

1. If  $\sin \theta = \frac{4}{5}$ , what are the values of
  - (a)  $\cos \theta$ ?
  - (b)  $\tan \theta$ ?
  - (c)  $\sec \theta$ ?
2. If  $\tan \theta = \sqrt{3}$ , what are the values of
  - (a)  $\sin \theta$ ?
  - (b)  $\cos \theta$ ?
3. If  $\cos \theta = x$ , what are the values of
  - (a)  $\sin \theta$ ?
  - (b)  $\tan \theta$ ?
4. Find an expression for  $\sin(3x)$  in terms only of powers and multiples of  $\sin x$ .  
HINTS:
  - (a) Write  $3x$  as  $2x + x$  and use the formula for  $\sin(A + B)$ .
  - (b) Rewrite the resulting expression using the formulas for  $\sin 2x$  and  $\cos 2x$ .
  - (c) Rewrite the expression using the trig version of the Pythagorean theorem to eliminate  $\cos^2 x$ .
5. If  $\tan \theta = \frac{5}{12}$ , what is the value of  $\sin(2\theta)$ ?