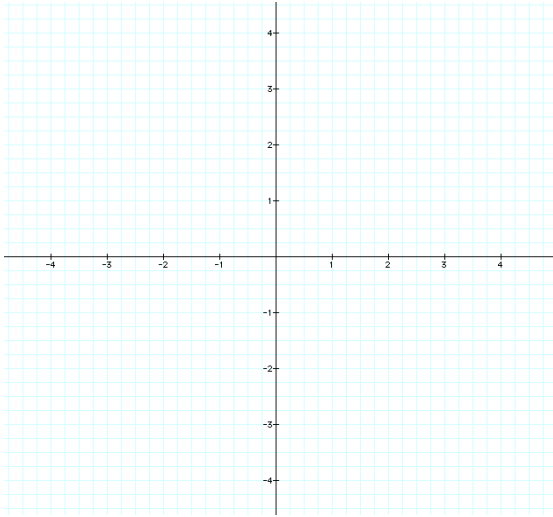


AP Calculus - Test of Basic Facts

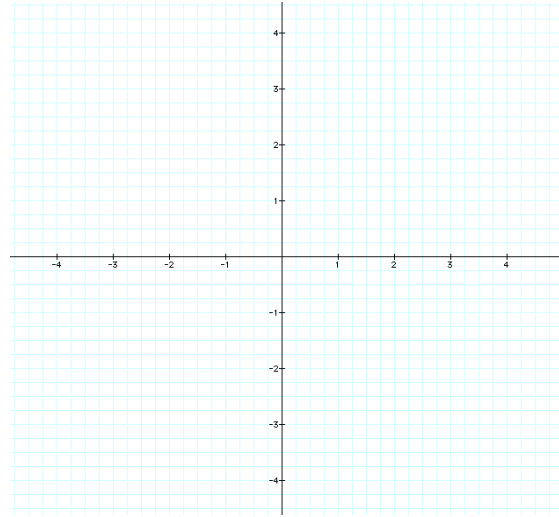
Each of the following questions are to be completed without the aid of a calculator, textbook or notebook.

Sketch the following graphs on the axes provided:

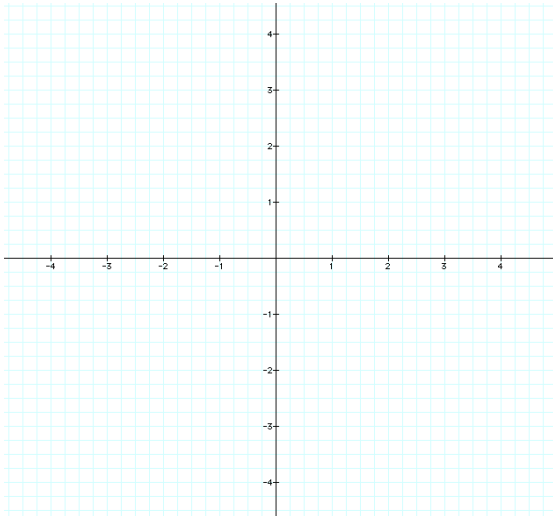
1) $y = x$



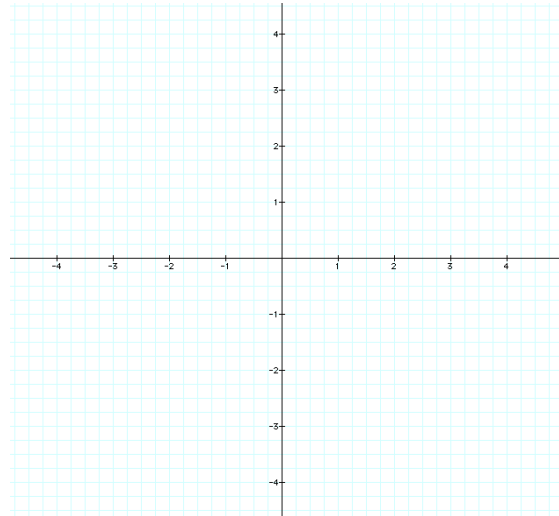
2) $y = k$



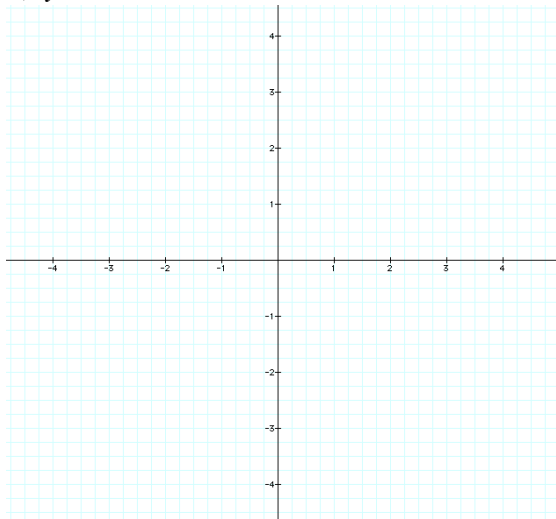
3) $x = k$



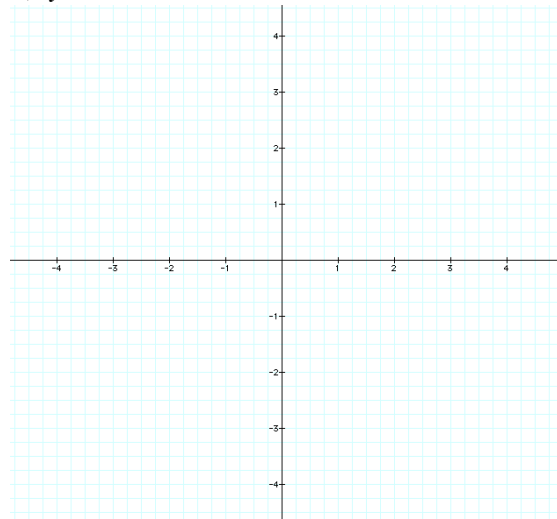
4) $y = x^2$



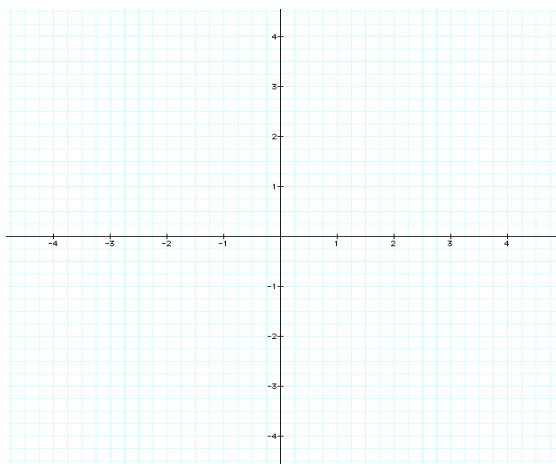
5) $y = x^3$



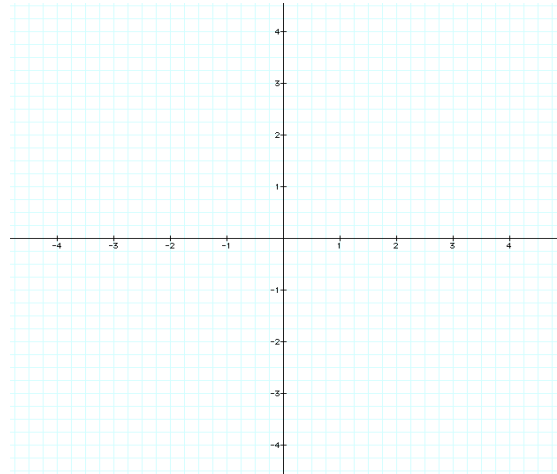
6) $y = \sqrt{x}$



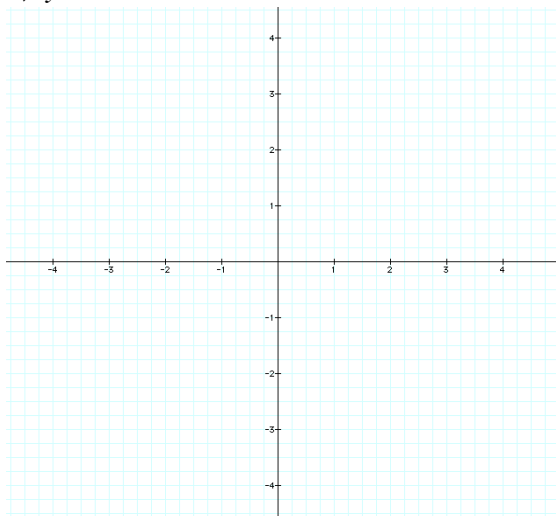
7) $y = e^{-x}$



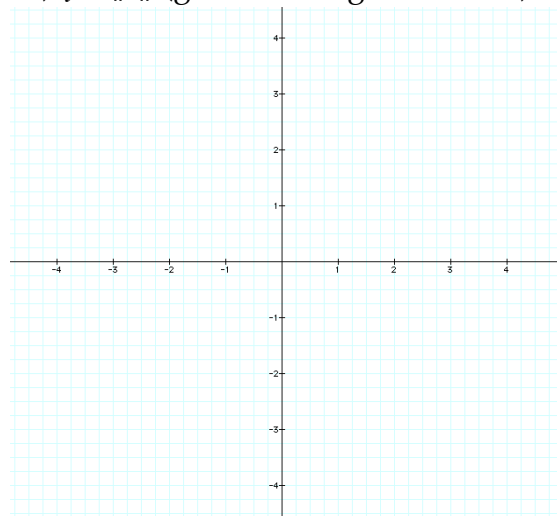
8) $y = |x|$



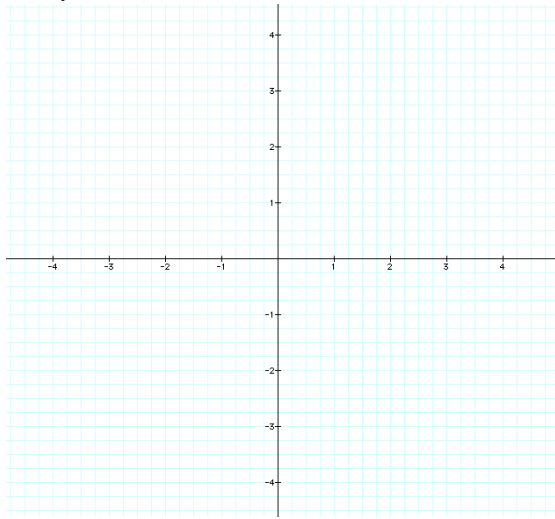
9) $y = \sqrt[3]{x}$



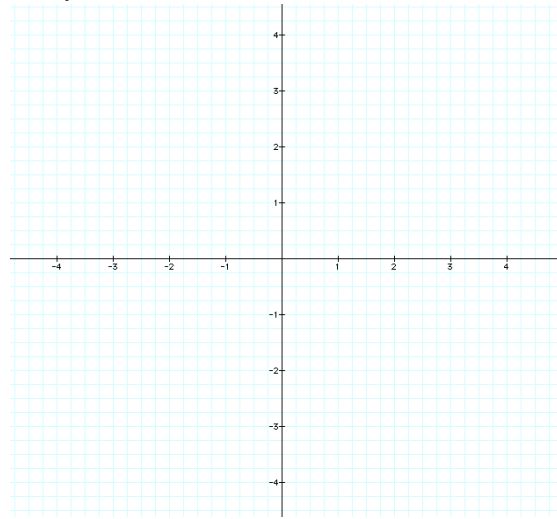
10) $y = \lceil x \rceil$ (greatest integer function)



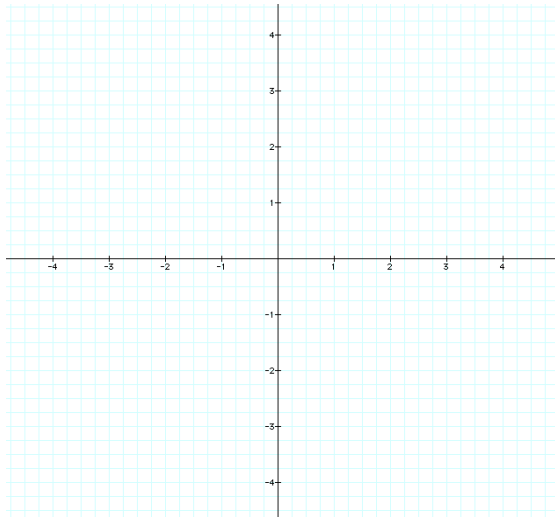
11) $y = \sin x$



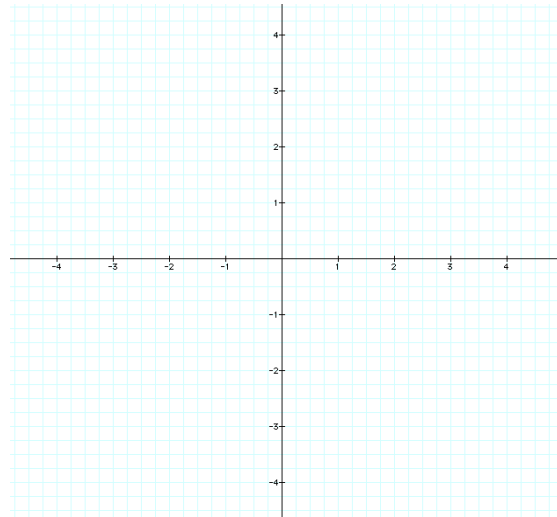
12) $y = \cos x$



13) $y = \tan x$



14) $y = \ln x$



State the formula for each of the following:

15) Area of a triangle: $A = \underline{\hspace{2cm}}$

16) Area of a parallelogram: $A = \underline{\hspace{2cm}}$

17) Area of a rectangle: $A = \underline{\hspace{2cm}}$

18) Area of a square: $A = \underline{\hspace{2cm}}$

19) Area of a Circle: $A = \underline{\hspace{2cm}}$

20) Area of a trapezoid: $A = \underline{\hspace{2cm}}$

20) Arc length: $a = \underline{\hspace{2cm}}$

21) Volume of a cone: $V =$ _____

22) Volume of a pyramid: $V =$ _____

23) Volume of a sphere: $V =$ _____

24) Surface area of a sphere: $A =$ _____

25) Volume of a cylinder: $V =$ _____

26) Surface area of a cylinder: $A =$ _____

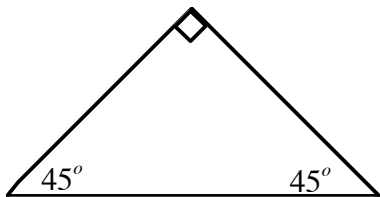
27) Volume of a rectangular prism: $V =$ _____

28) State the pythagorean theorem: _____

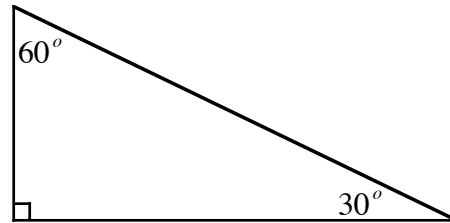
29) For what kind of triangles can the Pythagorean Thm. be used:

Label the lengths of the sides of the following triangles:

30)



31)



32) What is the formula used to find the slope of a line? _____

33) What is the point slope form of the equation of a line? _____

34) How do you find the inverse of a function?

35) How does the graph of a function relate to the graph of the inverse of the function?

36) How does a function relate algebraically to its inverse?

37) One degree equals how many radians? _____

38) One radian equals how many degrees? _____

39) State three forms of the pythagorean trigonometric identity (each using different trigonometric functions)

Write each of the following in terms of $\sin \theta$ and $\cos \theta$:

41) $\tan \theta$ _____

42) $\cot \theta$ _____

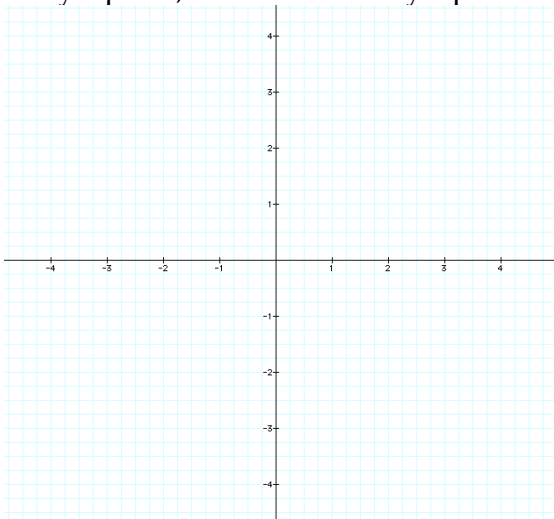
43) $\sec \theta$ _____

44) $\csc \theta$ _____

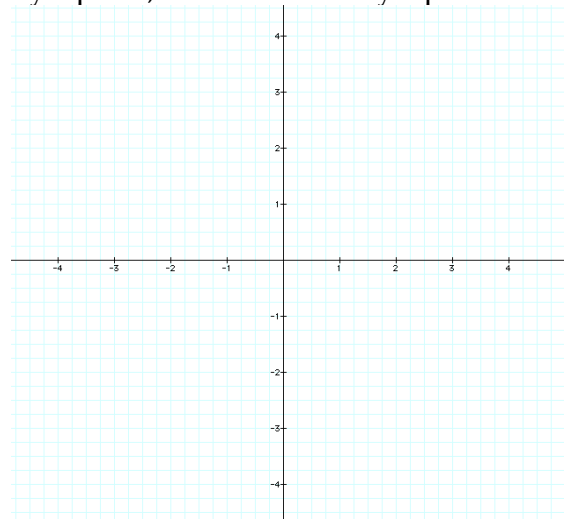
45) $\sin(2\theta)$ _____

46) $\cos(2\theta)$ _____

47) Sketch a graph that has one vertical asymptote, but no other asymptotes.



48) Sketch a graph that has one horizontal asymptote, but no other asymptotes.



Given the function $y = -a \sin b(x - c) + d$, describe the role of the following parameters:

49) the initial negative sign: _____

50) a: _____

51) b: _____

52) c: _____

53) d: _____

What are:

54) Whole numbers: _____

55) Natural numbers: _____

56) Real numbers: _____

57) Rational numbers: _____

58) Irrational numbers: _____

59) Integer numbers: _____

60) Rewrite the power # b^{-a} : _____