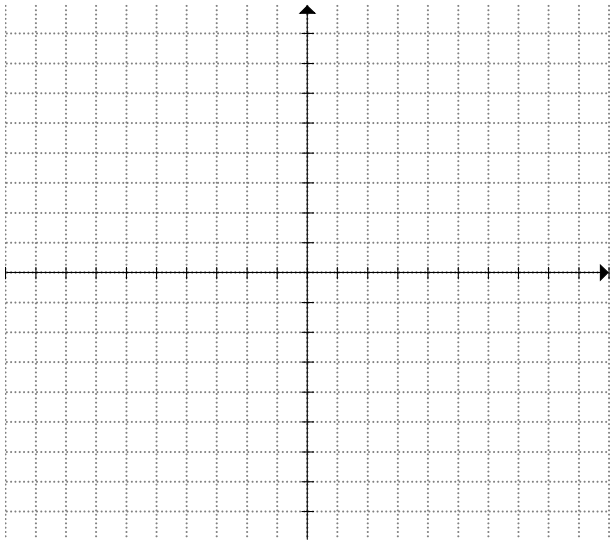
Name:_____ Date:_____

Math 12 Honours Section 1.1 Graphing and Solving Radical Functions

1. What is the domain and Range of the following function? $y = 2\sqrt{3x-4}+2$

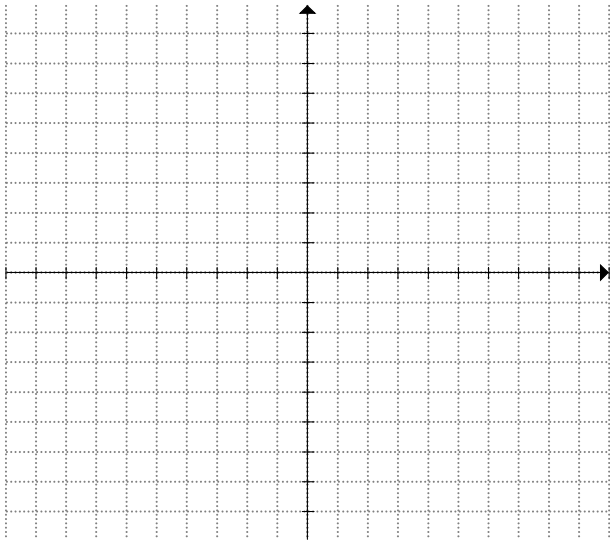
2. Graph each of the following functions below. State the Domain and Range

a) $y = \sqrt{3x+4}$



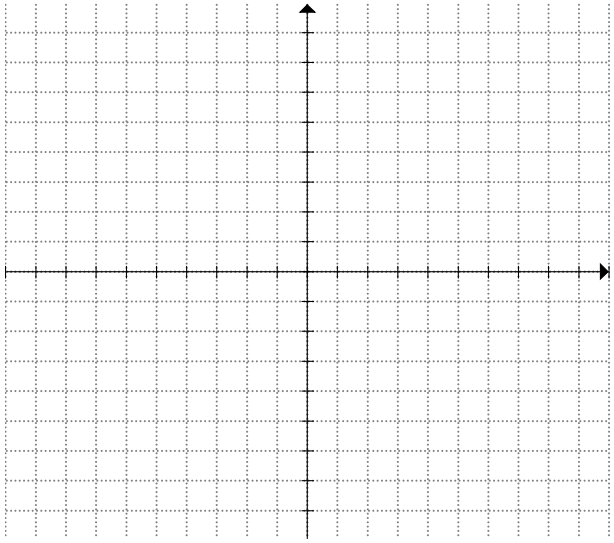
Domain: Range:

b) $y = -\sqrt{3x-8}+4$



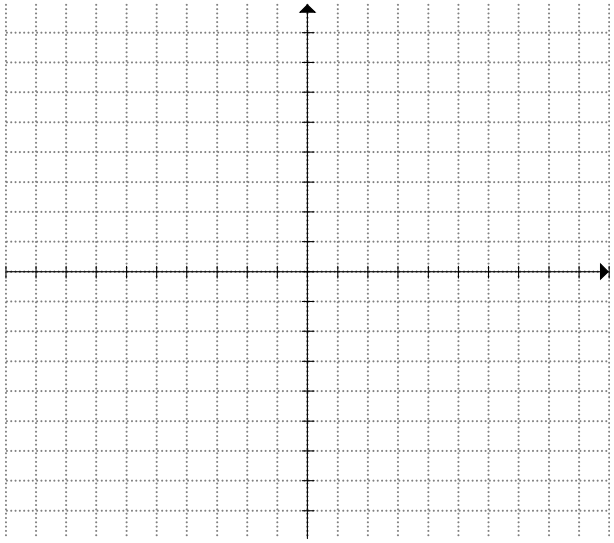
Domain: Range:

c) $y = \sqrt{5-2x}-3$



Domain: Range:

d) $y = -\sqrt{2x+6}+4$



Domain: Range:

3. For what values of “k” will the equation have an extraneous root? $\sqrt{3x+5}=k$

4. For what values of “p: will the equation have an extraneous root? $\sqrt{2x-p}=2x+12$

5. Solve each of the following equations algebraically. Indicate all extraneous roots:

a) $\sqrt{x+4}=-2$	b) $\sqrt{x+5}=-x-5$
c) $5-\sqrt{2x-11}=3$	d) $2\sqrt{4x-1}+8=16$
e) $\sqrt{1+9x}+6=2x$	f) $\sqrt{7x^2-1}+1=3x$

g) $\sqrt{3x+10}-\sqrt{5x}=0$	h) $\sqrt{5x^2-2x}=4$
e) $\sqrt{x-2}=\sqrt{3x+4}$	f) $\sqrt{3x+8}=3\sqrt{x}-2\sqrt{2}$
g) $2+\sqrt{x-5}=\sqrt{2x-3}$	h) $\sqrt{4-x}+\sqrt{x-9}=\sqrt{x-14}$

i) $\frac{2}{\sqrt{x+1}} = \sqrt{x} + \sqrt{x+1}$	j) $\frac{3}{\sqrt{x}} - 5 = \frac{1-2\sqrt{x}}{\sqrt{x}}$

6. Solve for "x" $\sqrt{x+\sqrt{x+11}} + \sqrt{x-\sqrt{x+11}} = 4$

7. The discriminant formula $b^2 - 4ac > 0$ is used to determine the number of roots that a quadratic equation in the form of $ax^2 + bx + c = 0$ has. Use the discriminant to determine what value of "k" will generate only one root: $0.5x + k = \sqrt{2x-7}$

8. For what values of "k" will the equation have i) only one root ii) no roots
iii) 2 real roots iv) one real root and one extraneous root

$3x + k = \sqrt{4x-3} + 2$