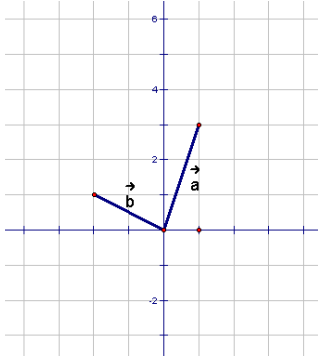


**Pre-Calculus Review Quiz #11**  
**Chapter: 8-1 to 8-4**

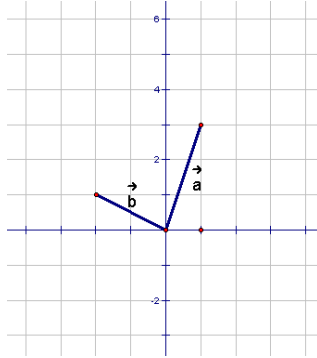
Name \_\_\_\_\_ Pd \_\_\_\_\_

**Topic 1: drawing vectors**

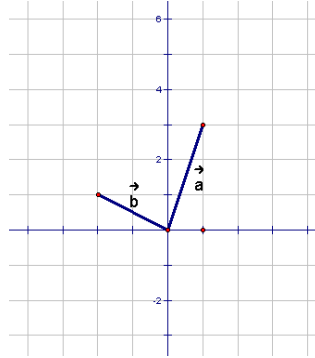
1. draw  $a + b$



2. draw  $b - a$



3. draw  $2a - b$



4. plot  $\langle 2, 3, 1 \rangle$

5. state the horizontal and vertical components of vectors a and b above:

6. state the ordered pair of vector t algebraically if  $t = 2a - 4b$

**Topic 2: horizontal and vertical components**

7. Vector  $a = \langle 2, 4 \rangle$  and vector  $b = \langle -1, 3 \rangle$ . Find the magnitude of  $2a + b$

8. The horizontal component of vector n is 4 and the vertical component is 6. Find the magnitude and direction of vector n.

9. The magnitude of vector m is 12 and the direction is 40 degrees north of east. Find the vertical and horizontal components of vector m.

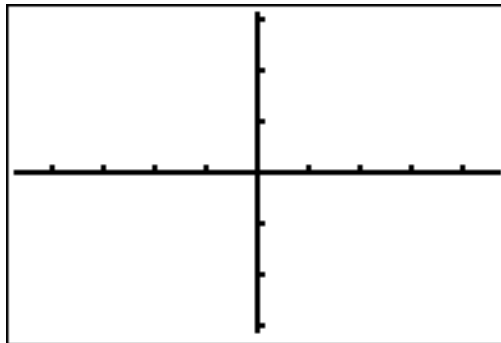
10. Point  $g = (-1, 2, 5)$  and point  $h = (3, 2, -3)$ . Write the vector  $gh$  algebraically.

11. Vector  $g = \langle -1, 2, 5 \rangle$  and vector  $h = \langle 3, 2, -3 \rangle$ . Find the net force when vectors g and h are applied?

12. An object is in equilibrium if the magnitude of the resultant force on it is zero. Two forces on an object are represented by  $\langle 3, -2, 4 \rangle$  and  $\langle 6, 2, 5 \rangle$ . Find a third vector that will place the object in equilibrium.

**Topic 3: Review Stuff**

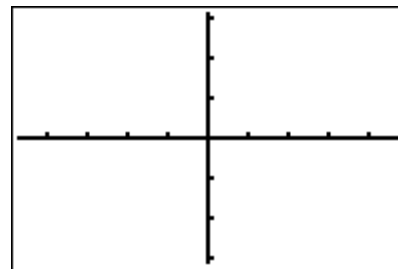
13. graph  $g(x)$   $g(x) = \begin{cases} -x^2 & \text{if } x < -1 \\ x^2 - 2 & \text{if } -1 \leq x \leq 1 \\ -x^2 & \text{if } x > 1 \end{cases}$



14. Is  $g(x)$  continuous at  $x = -1$ ? At  $x = 1$ ?

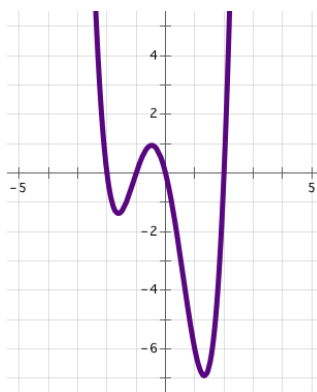
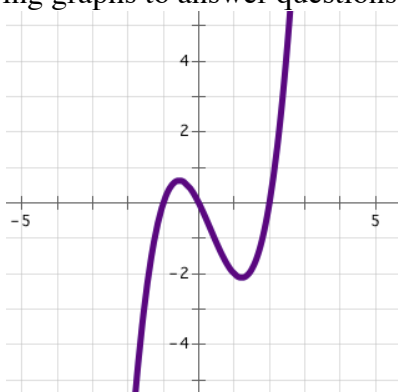
15. If  $g(x)$  is an even function and  $g(2) = 4$ , then what will  $g(-2)$  equal?

16.  $f(x)$  and  $g(x)$  are inverse functions, if  $(-2, 5)$  is on the graph of  $f(x)$ , then what point must be on  $g(x)$ ?



17. Find the inverse of  $g(x) = x^2 - 1$  and graph both to the right →

Use the following graphs to answer questions 18-20



16. State the end behavior of each.

17. State if each represents an even or odd **degree** function

18. State the intervals of increasing and decreasing for the graphs above

19. Show work by using the quadratic formula to solve  $y = x^2 - x - 20$

20. State the domain for the equation

$$y = \frac{2x}{x-1} \quad f(x) = \sqrt{2x-4} \quad g(x) = \frac{3}{\sqrt{3x}}$$

21. State the equation ( $y=mx+b$  form) of the line that passes through  $(2, 3)$  and is parallel to the line with an equation of  $y = 4x - 2$