

Write down the names of everyone in your group and where they are from or where they went to High School.

Note: You may find the Appendices A, B, & D helpful in completing this worksheet.

1. Given the points $(3, -2)$ and $(1, 4)$

(a). Find the distance between the two points.

(b). Find the slope of the line through the two points.

(c). Write down an equation for the line passing through the two points.

2. Graph the inequality $4x - 2y > 6$.

3. Write down an equation for a circle with radius 3 and centered at (a). the origin (b). the point $(2, -1)$.

4. The curve $y = -x^2 + 4x - 4$ describes a parabola. Without using a calculator,

(a). Which direction does the parabola open?

(b). Where is the vertex?

5. Given the interval in set notation $\{x \mid -4 < x \leq 2\}$

(a). Express it in interval notation

(ie. use parentheses and/or square brackets)

(b). Sketch the interval on a number line.

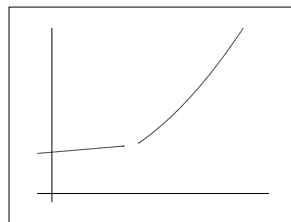
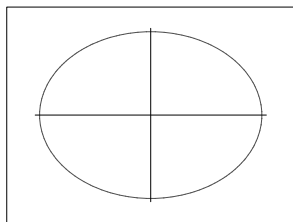
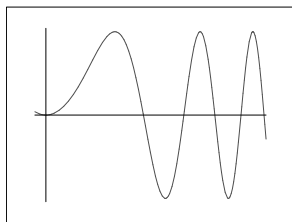
6. Solve the following equations for x :

(a). $x^2 = x$

(b). $2x^2 + 5x - 3 = 0$

7. Explain what a function is.

8. Circle the the following graphs and tables that represent functions? How do you know?



x	y
0	2
1	4
1	6
2	8

x	y
0	2
1	4
2	4
3	8

9. Given $f(x) = 2x^2 + x$, find

(a). $f(-1)$

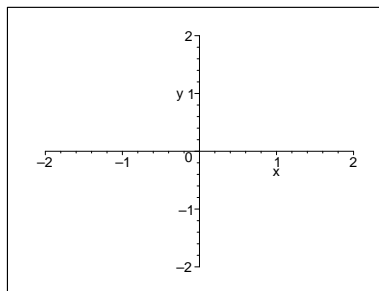
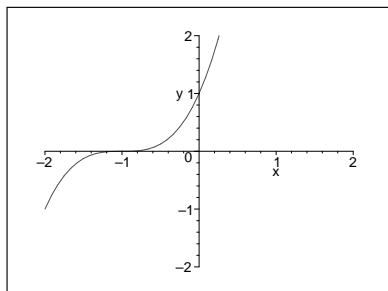
(b). $f(x + h)$

[Expand your answer.]

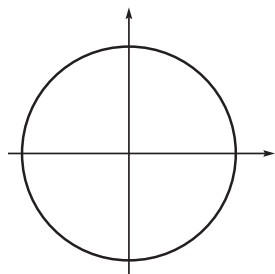
10. Find the domain of $g(x) = \frac{\sqrt{x+5}}{x}$.

11. Determine whether $f(x) = x - x^3$ is odd, even, or neither.

12. Given the graph below of a function $y = f(x)$, sketch the graph of $y = f(x - 1)$ on the same graph. Then sketch $y = -f(x - 1)$ on the empty set of axes provided.



13. Clearly mark and label on the unit circle below, the points associated with the following angles (in radians) $\theta = 0, \pi/2, \pi/4, \pi/3, \pi/6$. Also, label each point with its corresponding x - and y -coordinate [i.e give the coordinate pair (x, y) for each point].



14. What is π ?

15. Convert

(a). 135° to radians.

(b). $-\frac{7\pi}{4}$ to degrees.

16. Draw the angle $\frac{11\pi}{3}$ in standard position.

17. Sketch the curve $y = 3 \sin x$.

18. Find the exact values of the six trigonometric functions for $\frac{\pi}{3}$.

$$\sin \frac{\pi}{3} =$$

$$\cos \frac{\pi}{3} =$$

$$\tan \frac{\pi}{3} =$$

$$\csc \frac{\pi}{3} =$$

$$\sec \frac{\pi}{3} =$$

$$\cot \frac{\pi}{3} =$$

19. Solve the following inequalities:

(a). $x^2 - 2x - 8 > 0$

(b). $\frac{1}{x} + x \leq 0$

20. Solve $|x - 6| \leq 4$ and sketch the solution on a number line.

21. Find all solutions in the interval $[0, 2\pi]$ of

(a). $\sin x = 1$

(b). $\sin 3x = 1$

(c). $2 \cos x + 4 \sin x \cos x = 0$

- Finish the worksheet to the best of your ability. Come prepared to present solutions in class tomorrow.
- Read Appendices A, B, and C and answer the following questions:
 - (a). What are the main concepts of Appendix A. Are any of them unclear?
 - (b). What are the main concepts of Appendix B. Are any of them unclear?
 - (c). What are the main concepts of Appendix C. Are any of them unclear?
- Have you taken a precalculus class that covered trigonometry [see App D]? If not, you should not be in this class – please see the instructor.
- Indicate any of the problems on this worksheet that are unfamiliar to you or you do not feel very comfortable with the concepts. Please add comments about your level of confidence for them.