## Intermediate Algebra Questions (worksheet 4)

Q1. Write the most appropriate answer in the blank.
(a) $\left(-2 x^{3}\right)^{2}=$ $\qquad$
(b) The slope of the line $x+y=0$ is $\qquad$
(c) If $x=2$ and $y=-2$, then $x^{2}+y^{2}=$ $\qquad$
(d) The $y$-intercept of the line $x-y=5$ is $\qquad$
(e) $-4+8 \div 2=$ $\qquad$
(f) A simplified form of $2(x+2)-x+3$ is $\qquad$
(g) If $f(x)=x^{2}+2 x+1$, then $f(-2)=$ $\qquad$
(h) The point $(-2,2)$ is in quadrant $\qquad$
(i) The ordered pair solution of the system $\begin{gathered}-x+y=2 \\ x=-1\end{gathered}$
is $\qquad$
(j) The solution set of $x^{2}-4=0$ is $\qquad$

Q2. $\quad$ Simplify $\left(\frac{x}{y}\right)^{0}\left(x y^{3}\right)^{2} x^{2} y$

Q3. Solve for $x$.
(a) $\frac{3 x-1}{2}=x+2$
(b) $|x+3|=4$

Q4. Solve $|x+2| \geq 4$ and write the solution set in interval notation.

Q5. Solve the system $\begin{gathered}2 x+3 y=4 \\ x+2 y=3\end{gathered}$

Q6. Find the equation of the line through the points $(2,3)$ and $(6,7)$.

Q7. Are the lines $y=-2 x+3$ and $2 x+y=4$ parallel, perpendicular or neither? Explain your answer.

Q8. Let $R=\{(1,0),(2,3),(1,-2),(3,4)\}$.
(a) Determine the domain of $R$.
(b) Is $R$ a function? Explain your answer.
(c) What is the range of $R$ ?

Q9. a. Complete the table below using the equation $x+y=2$

| x | -1 | 0 | 1 | 2 |
| :--- | :--- | :--- | :--- | :--- |
| y |  |  |  |  |

b. Graph the equation $x+y=2$.
c. Find the $x$-intercept of the graph.


Q10. Let $f(x)=x^{2}-5$ and $g(x)=|x-1|$.
(a) $f(-2)=$
(b) $f(3)=$
(c) $g(6)=$
(d) $g(-7)=$

Q11. Solve the quadratic equations.
(a) $x^{2}+3 x-4=0$
(b) $-x^{2}+4=0$

Q12. Let $A=(2,3)$ and $B=(3,2)$.
(a) Find the midpoint of the line segment $A B$.
(b). What is the length of the line segment $A B$ ?

Q13. On Sunday, Sarah and Lydia paid $\$ 13$ for 2 sandwiches and 2 coffees. On Tuesday, they paid $\$ 12.50$ for 3 sandwiches and one coffee. What was the price of one sandwich? What was the price of one coffee?

