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# Intermediate Algebra Questions (worksheet 4)

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

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

**Q3.** Solve for x.

(a) 
$$\frac{3x-1}{2} = x+2$$

(b) 
$$|x+3| = 4$$

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

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Q5. Solve the system \begin{array}{l} 2x + 3y = 4\\ x + 2y = 3 \end{array}
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**Q6.** Find the equation of the line through the points (2,3) and (6,7).

**Q7.** Are the lines y = -2x + 3 and 2x + 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
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- **b.** Graph the equation x + y = 2.
- c. Find the *x*-intercept of the graph.



**d.** Is there a *y*-intercept for the graph? if so, find it.

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)  $x^2 + 3x - 4 = 0$ 

(b)  $-x^2 + 4 = 0$ 

**Q12.** Let A = (2, 3) and B = (3, 2).

(a) Find the midpoint of the line segment AB.

(b). What is the length of the line segment AB?

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?