Gateway Exam #1 Practice Problems
Solving Equations

1. All values of x that solve the equation $2x + 3 = 9$ are:
   (a) $x = 3$ only
   (b) $x = 3$ and $x = -3$ only
   (c) all numbers greater than -3 but less than 3
   (d) $x = 6$ only
   (e) There are no values of x that solve the given equation.

2. All values of x that solve the equation $3x - 4 = 8$ are:
   (a) $x = 4$ and $x = 12$ only
   (b) $x = 4$ only
   (c) $x = 12$ only
   (d) $x = 6$ and $x = 12$ only
   (e) all numbers between $x = 4$ and $x = 12$

3. All values of w that solve the equation $5w + 10 = 25$ are:
   (a) $w = 5$ only
   (b) $w = 3$ and $w = 5$ only
   (c) $w = 3$ only
   (d) $w = 10$ and $w = 15$ only
   (e) $w = 15$ only

4. All values of x that solve the equation $x^2 + 2x + 1 = 0$ are:
   (a) $x = 1$ only
   (b) $x = 1$ and $x = -1$ only
   (c) all numbers between 1 and -1
   (d) $x = -1$ only
   (e) all numbers greater than 1

5. All values of u that solve the equation $u^2 + 1 = 0$ are:
   (a) $u = -1$ only
   (b) $u = -1$ and $u = 1$ only
   (c) all numbers between -1 and 1
   (d) $u = 1$ only
   (e) There are no values of u that solve the given equation.

6. All values of w that solve the equation $w^2 + 3w + 2 = 0$ are:

   (a) $w = 1$ and $w = 2$ only
   (b) $w = 1$ only
   (c) $w = 2$ only
   (d) $x = -1$ only
   (e) $w = -1$ and $w = -2$ only

7. All values of x that solve the equation $x^3 = 8$ are:

   (a) $x = 2$ and $x = -2$ only
   (b) $x = -2$ only
   (c) $x = 2$ only
   (d) $x = 0.5$ only
   (e) There are no values of x that solve the given equation.

8. All values of u that solve the equation $u^4 = 81$ are:

   (a) $u = -3$ and $u = 3$ only
   (b) $u = 3$ only
   (c) $u = 9$ and $u = -9$ only
   (d) $u = 9$ only
   (e) $u = -9$ only

9. All values of p that solve the equation $p^{1/2} = 4$ are:

   (a) $p = 2$ only
   (b) $p = 2$ and $p = -2$ only
   (c) $p = 16$ and $p = -16$ only
   (d) $p = 16$ only
   (e) $p = -2$ only

10. All values of q that solve the equation $q^3 - 2 = 25$ are:

    (a) $q = 5$ and $q = -5$ only
    (b) $q = 3$ only
    (c) $q = 3$ and $q = -3$ only
    (d) $q = 5$ only
    (e) $q = -5$ only

11. All values of x that solve the equation $\dfrac{1}{x-3} = 1$ are:

    (a) $x = 2$ and $x = 4$ only
    (b) $x = 4$ only

(c) $x = 2$ only

(d) $x = 3$ only

(e) There are no values of x that solve the given equation.

12. All values of x that solve the equation $\dfrac{1}{x^2+2} = -3$ are:

(a) $x = 1$ only

(b) $x = -1$ only

(c) $x = 1$ and $x = -1$ only

(d) $x = -\sqrt{\frac{4}{3}}$ only

(e) There are no values of x that solve the given equation.

13. All values of x that solve the equation $\dfrac{x}{x+1} = 2$ are:

(a) $x = 1$ and $x = 2$ only

(b) $x = 2$ only

(c) $x = 2$ and $x = -2$ only

(d) $x = -2$ only

(e) There are no values of x that solve the given equation.

14. All values of x that solve the equation $-\dfrac{1}{x+2} = x$ are:

(a) $x = -1$ only

(b) $x = 1$ and $x = -1$ only

(c) $x = 0$ and $x = 2$ only

(d) $x = -2$ only

(e) There are no values of x that solve the given equation.

15. All values of x that solve the equation $\dfrac{1}{x+1} = 1$ are:

(a) $x = -1$ and $x = 0$ only

(b) $x = -1$ only

(c) $x = 0$ only

(d) $x = 1$ and $x = -1$ only

(e) There are no values of x that solve the given equation.

Answers:

1.	a	2.	b	3.	c	4.	d	5.	e
6.	e	7.	c	8.	a	9.	d	10.	b
11.	b	12.	e	13.	d	14.	a	15.	c