Problems for Gateway #3: Solving Equations Involving Fractions

1. The value(s) of x that solve the equation:

$$\frac{1}{2x} = \frac{1}{x-2}$$

are:

(a) $x = -2$ only   **(b)** $x = 2$ only
(c) $x = 0$ only   **(d)** $x = -1$ and $x = 0$ only
(e) $x = 1$ and $x = 2$ only

2. The value(s) of x that solve the equation:

$$\frac{1}{x} = \frac{1}{2x-2}$$

are:

(a) $x = -3$ only   **(b)** $x = 2$ only
(c) $x = 3$ only   **(d)** $x = -2$ only
(e) $x = 4$ and $x = 8$ only

3. The value(s) of x that solve the equation:

$$\frac{1}{x} = x$$

are:

(a) $x = -1$ only   **(b)** $x = 1$ only
(c) $x = 1$ and $x = -1$ only   **(d)** $x = 2$ and $x = -2$ only
(e) $x = 0$ only

4. The value(s) of x that solve the equation:

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

are:

(a) $x = -2$ and $x = 3$ only   **(b)** $x = 2$ and $x = -3$ only
(c) $x = 1$ only   **(d)** $x = 0$ only
(e) $x = -5$ only

5. The value(s) of x that solve the equation:

$$\frac{1}{6x} = \frac{1}{5x+1}$$

are:

(**a**) $x = 6$ only   (**b**) $x = 5$ only
(**c**) $x = 5$ and 6 only   (**d**) $x = 1$ only
(**e**) $x = 1$ and 6 only

6. The value(s) of x that solve the equation:

$$\frac{1}{x} = \frac{2}{x+7}$$

are:

(**a**) $x = 1$ and $x = 6$ only   (**b**) $x = -2$ only
(**c**) $x = 1$ only   (**d**) $x = 7$ only
(**e**) $x = -7$ only

7. The value(s) of x that solve the equation:

$$\frac{1}{2x} = \frac{1}{x+1}$$

are:

(**a**) $x = -2$ only   (**b**) $x = 2$ and $x = 3$ only
(**c**) $x = 1$ only   (**d**) $x = 2$ only
(**e**) $x = 0$ only

8. The value(s) of x that solve the equation:

$$\frac{2}{x} = \frac{1}{x-2}$$

are:

(**a**) $x = 2$ only   (**b**) $x = 4$ only
(**c**) $x = 1$ and $x = 3$ only   (**d**) $x = -2$ only
(**e**) $x = -2$ and $x = 1$ only

9. The value(s) of x that solve the equation:

$$\frac{3}{x} = \frac{3}{2x+1}$$

are:

(**a**) $x = -1$ only   (**b**) $x = 4$ only
(**c**) $x = 0$ only   (**d**) $x = -2$ and $x = 2$ only
(**e**) $x = -8$ only

10. The value(s) of x that solve the equation:

$$\frac{3}{2x} = \frac{1}{x+1}$$

are:

(**a**) $x = -2$ only   (**b**) $x = -2$ and $x = 1$ only
(**c**) $x = -3$ and $x = 4$ only   (**d**) $x = 1$ only
(**e**) $x = -3$ only

ANSWERS:

1.	A	**2.**	B	**3.**	C	**4.**	E
5.	D	**6.**	D	**7.**	C	**8.**	B
9.	A	**10.**	E				