

**A.A.16: Rational Expressions 2: Simplify fractions with polynomials in the numerator and denominator by factoring both and renaming them to lowest terms**

1 The fraction  $\frac{3-x}{2x-6}$ ,  $x \neq 3$ , is equivalent to

- 1)  $\frac{1}{2}$
- 2)  $-\frac{1}{2}$
- 3)  $\frac{1}{4}$
- 4)  $-\frac{1}{4}$

2 Written in simplest form, the expression  $\frac{x^2-9x}{45x-5x^2}$  is equivalent to

- 1)  $\frac{1}{5}$
- 2)  $-\frac{1}{5}$
- 3) 5
- 4) -5

3 Which expression is equivalent to  $\frac{y-x}{x^2-y^2}$ ?

- 1)  $\frac{1}{x-y}$
- 2)  $\frac{-1}{x-y}$
- 3)  $\frac{1}{x+y}$
- 4)  $\frac{-1}{x+y}$

4 Written in simplest form, the expression  $\frac{x^2y^2-9}{3-xy}$  is equivalent to

- 1) -1
- 2)  $\frac{1}{3+xy}$
- 3)  $-(3+xy)$
- 4)  $3+xy$

5 Written in simplest form, the expression  $\frac{x^2y-4}{4-x^2y}$  is

- 1) 1
- 2) 0
- 3)  $\frac{x^2y-4}{4-x^2y}$
- 4) -1

6 The expression  $\frac{3y^2-12y}{4y^2-y^3}$  is equivalent to

- 1)  $\frac{3}{y}$
- 2)  $-\frac{3}{y}$
- 3)  $-\frac{9}{4}$
- 4)  $\frac{3}{4} - \frac{12}{y^2}$

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**Answer Section**

1 ANS: 2 PTS: 2 REF: 060118siii

2 ANS: 2

$$\frac{x(x-9)}{5x(9-x)} = \frac{-1(9-x)}{5(9-x)} = -\frac{1}{5}$$

PTS: 2 REF: 060504b

3 ANS: 4 PTS: 2 REF: 011013b

4 ANS: 3

$$\frac{(xy+3)(xy-3)}{-1(xy-3)} = -(3+xy)$$

PTS: 2 REF: 080305b

5 ANS: 4 PTS: 2 REF: fall9911b

6 ANS: 2

$$\frac{3y^2-12y}{4y^2-y^3} = \frac{3y(y-4)}{y^2(4-y)} = \frac{-3y(4-y)}{y^2(4-y)} = -\frac{3}{y}$$

PTS: 2 REF: 080619b