Section 14-2: Reducing Fractions to Lowest Terms

1. 010109a, P.I. A.A.14

If $x \neq 0$, the expression $\frac{x^2+2x}{x}$ is equivalent to

[A] 4 [B] 2 [C] $3x$ [D] $x+2$

2. 060102a, P.I. A.A.14

Which polynomial is the quotient of $\frac{6x^3+9x^2+3x}{3x}$?

[A] $2x^2+3x+1$ [B] $2x+3$

[C] $2x^2+3x$ [D] $6x^2+9x$

3. fall0718ia, P.I. A.A.14

The expression $\frac{9x^4-27x^6}{3x^3}$ is equivalent to

[A] $3x(1-3x)$ [B] $3x(1-3x^2)$

[C] $3x(1-9x^5)$ [D] $9x^3(1-x)$

4. 069924a, P.I. A.A.16

Simplify: $\frac{9x^2-15xy}{9x^2-25y^2}$

5. 010631a, P.I. A.A.16

Simplify: $\frac{x^2+6x+5}{x^2-25}$

6. 060712b, P.I. A.A.16

Which expression is in simplest form?

[A] $\frac{x}{x^2}$ [B] $\frac{x^2-4}{x+2}$

[C] $\frac{9}{x^2+9}$ [D] $\frac{x^2-6x+9}{x^2-x-6}$

7. 080305b, P.I. A.A.16

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

[A] $-(3+xy)$ [B] $3+xy$

[C] $\frac{1}{3+xy}$ [D] -1

8. 060325b

Express the following rational expression in simplest form: $\frac{9-x^2}{10x^2-28x-6}$

9. 060202b, P.I. A.A.16

For all values of x for which the expression is defined, $\frac{2x+x^2}{x^2+5x+6}$ is equivalent to

[A] $\frac{x}{x+2}$ [B] $\frac{x}{x+3}$

[C] $\frac{1}{x+3}$ [D] $\frac{1}{x+2}$

10. 060504b, P.I. A.A.16

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

[A] -5 [B] 5 [C] $\frac{1}{5}$ [D] $-\frac{1}{5}$

11. 080619b, P.I. A.A.16

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

[A] $\frac{3}{y}$ [B] $-\frac{9}{4}$ [C] $\frac{3}{4}-\frac{12}{y^2}$ [D] $-\frac{3}{y}$

[1] D

[2] A

[3] B

[4]
[2] $\frac{3x}{3x+5y}$
[1] One correct factoring is shown, either $3x(3x - 5y)$ or $(3x - 5y)(3x + 5y)$.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[5]
[2] $\frac{x+1}{x-5}$, and appropriate work is shown.
[1] Only one expression is factored correctly, such as $(x + 5)(x + 1)$ or $(x + 5)(x - 5)$, but an appropriate simplification is done.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[6] C

[7] A

[8]
[2] $\frac{-x-3}{10x+2}$ or an equivalent answer in simplest form, and appropriate work is shown.
[1] Either the numerator or the denominator is factored completely.
or [1] Appropriate work is shown, but $\frac{3-x}{x-3} = -1$ is not recognized.
or [1] $\frac{-x-3}{10x+2}$ or an equivalent answer in simplest form, but no work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[9] B

[10] D

[11] D