

NAME: \_\_\_\_\_

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

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

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

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

Which polynomial is the quotient of

$$\frac{6x^3 + 9x^2 + 3x}{3x}?$$

[A]  $2x^2 + 3x$       [B]  $6x^2 + 9x$   
[C]  $2x + 3$       [D]  $2x^2 + 3x + 1$

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

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

[A]  $3x(1 - 9x^5)$       [B]  $3x(1 - 3x)$   
[C]  $3x(1 - 3x^2)$       [D]  $9x^3(1 - x)$

4. 060824ia, P.I. A.A.16

Which expression represents  $\frac{2x^2 - 12x}{x - 6}$  in simplest form?

[A]  $2x$       [B]  $2x + 2$       [C] 0      [D]  $4x$

5. 080821ia, P.I. A.A.16

Which expression represents  $\frac{25x - 125}{x^2 - 25}$  in simplest form?

[A]  $\frac{5}{x}$       [B]  $\frac{25}{x - 5}$       [C]  $\frac{-5}{x}$       [D]  $\frac{25}{x + 5}$

6. 010631a, P.I. A.A.16

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

7. 060921ia, P.I. A.A.16

Which expression represents  $\frac{x^2 - 2x - 15}{x^2 + 3x}$  in simplest form?

[A] -5      [B]  $\frac{x - 5}{x}$   
[C]  $\frac{-2x - 15}{3x}$       [D]  $\frac{-2x - 5}{x}$

8. 060837a, P.I. A.A.16

Express in simplest form:  $\frac{x^2 - 5x - 24}{x^2 - 8x}$

9. 069924a, P.I. A.A.16

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

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10. 060712b, P.I. A.A.16

Written in simplest form, the expression

$\frac{x^2y-4}{4-x^2y}$  is:

- [A]  $\frac{x^2y-4}{4-x^2y}$       [B] -1      [C] 1      [D] 0

11. 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] -1      [D]  $\frac{1}{3+xy}$

12. 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]  $\frac{1}{5}$

13. 080619b, P.I. A.A.16

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

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

14. 060325b

Express the following rational expression in

simplest form:  $\frac{9-x^2}{10x^2-28x-6}$

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

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

Which expression is in simplest form?

- [A]  $\frac{x^2-4}{x+2}$       [B]  $\frac{9}{x^2+9}$   
[C]  $\frac{x}{x^2}$       [D]  $\frac{x^2-6x+9}{x^2-x-6}$

[1] A \_\_\_\_\_

[2] D \_\_\_\_\_

[3] C \_\_\_\_\_

[4] A \_\_\_\_\_

[5] D \_\_\_\_\_

[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

[6] incorrect procedure. \_\_\_\_\_

[7] B \_\_\_\_\_

[3]  $\frac{x+3}{x}$  or  $1+\frac{3}{x}$ , and appropriate work is shown.

[2] Appropriate work is shown, but one computational or factoring error is made.

[1] Appropriate work is shown, but two or more computational or factoring errors are made.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1]  $\frac{x+3}{x}$  or  $1+\frac{3}{x}$ , 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

[8] incorrect procedure. \_\_\_\_\_

[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

[9] incorrect procedure. \_\_\_\_\_

[10] B \_\_\_\_\_

[11] B \_\_\_\_\_

[12] C \_\_\_\_\_

[13] D \_\_\_\_\_

[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

[14] incorrect procedure. \_\_\_\_\_

[15] B \_\_\_\_\_

[16] B \_\_\_\_\_