

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

1. 080706b, P.I. A2.A.17

Which expression is equivalent to the

complex fraction  $\frac{\frac{1}{a} - a}{\frac{1}{a} + 1}$ ?

- [A]  $-(1-a)$  [B]  $+1$   
 [C]  $1-a$  [D]  $-1$

2. 080513b, P.I. A2.A.17

When simplified, the complex fraction

$\frac{1 + \frac{1}{x}}{\frac{1}{1-x}}$ ,  $x \neq 0$ , is equivalent to

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

3. 060713b, P.I. A2.A.17

The expression  $\frac{\frac{1}{3} - \frac{1}{x}}{\frac{3}{x} - 1}$  is equivalent to

- [A]  $3$  [B]  $\frac{1}{3}$  [C]  $-\frac{1}{3}$  [D]  $-3$

4. 010706b, P.I. A2.A.17

The expression  $\frac{\frac{1}{3} + \frac{1}{3x}}{\frac{1}{x} + \frac{1}{3}}$  is equivalent to

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

5. 080220b, P.I. A2.A.17

Which expression is equivalent to the

complex fraction  $\frac{\frac{x}{x+2}}{1 - \frac{x}{x+2}}$ ?

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

6. 010312b, P.I. A2.A.17

The fraction  $\frac{\frac{x}{y} + x}{\frac{1}{y} + 1}$  is equivalent to

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

7. 010206b, P.I. A2.A.17

The expression  $\frac{\frac{a}{b} - \frac{b}{a}}{\frac{1}{a} + \frac{1}{b}}$  is equivalent to

- [A]  $ab$  [B]  $a+b$   
 [C]  $a-b$  [D]  $\frac{a-b}{ab}$

8. 060317b, P.I. A2.A.17

In simplest form,  $\frac{\frac{1}{x^2} - \frac{1}{y^2}}{\frac{1}{y} + \frac{1}{x}}$  is equal to

- [A]  $\frac{x-y}{xy}$  [B]  $y-x$   
 [C]  $\frac{y-x}{xy}$  [D]  $x-y$

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9. 060415b, P.I. A2.A.17

The expression  $\frac{\frac{1}{x} + \frac{1}{y}}{\frac{1}{x^2} - \frac{1}{y^2}}$  is equivalent to

[A]  $\frac{y-x}{xy}$  [B]  $y-x$

[C]  $\frac{xy}{y-x}$  [D]  $\frac{xy}{x-y}$

10. 060919b, P.I. A2.A.17

The expression  $\frac{1 - \frac{x}{x-y}}{\frac{1}{x-y}}$  is equivalent to

[A]  $1-x$  [B]  $y$  [C]  $-y$  [D]  $x-y$

11. 060112b, P.I. A2.A.17

In a science experiment, when resistor  $A$  and resistor  $B$  are connected in a parallel circuit, the total resistance is  $\frac{1}{\frac{1}{A} + \frac{1}{B}}$ . This complex fraction is equivalent to

[A]  $\frac{AB}{A+B}$  [B]  $A+B$  [C]  $1$  [D]  $AB$

12. 010629b, P.I. A2.A.17

Simplify completely:  $\frac{\frac{1-m}{m}}{m - \frac{1}{m}}$

13. 010826b, P.I. A2.A.17

Express in simplest form:  $\frac{x - \frac{4}{x}}{\frac{x}{2+x}}$

14. 060823b, P.I. A2.A.17

Simplify:  $\frac{\frac{x-3}{3-x}}{\frac{x}{x-3}}$

15. 080323b, P.I. A2.A.17

Express in simplest form:  $\frac{\frac{x-4}{4-x}}{1 - \frac{4}{x}}$

16. 060628b, P.I. A2.A.17

Simplify for all values of  $a$  for which the expression is defined:  $\frac{1 - \frac{2}{a}}{\frac{4}{a^2} - 1}$

17. 080824b, P.I. A2.A.17

Express in simplest form:  $\frac{1 - \frac{1}{x}}{x - 2 + \frac{1}{x}}$

18. 080425b, P.I. A2.A.17

Express in simplest form:  $\frac{\frac{1}{r} - \frac{1}{s}}{\frac{r^2}{s^2} - 1}$

19. 080930b, P.I. A2.A.17

Express in simplest form:  $\frac{\frac{5}{a+b} - \frac{5}{a-b}}{\frac{10}{a^2-b^2}}$

[1] C \_\_\_\_\_

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

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

[4] B \_\_\_\_\_

[5] C \_\_\_\_\_

[6] A \_\_\_\_\_

[7] C \_\_\_\_\_

[8] C \_\_\_\_\_

[9] C \_\_\_\_\_

[10] C \_\_\_\_\_

[11] A \_\_\_\_\_

[4]  $\frac{-1}{m+1}$  or  $\frac{1}{-m-1}$ , and appropriate work is shown.

[3] Appropriate work is shown, but one computational or simplification error is made.

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

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

[1] Appropriate work is shown, but one conceptual error and one computational or simplification error are made.

or [1]  $\frac{-1}{m+1}$  or  $\frac{1}{-m-1}$ , 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

[12] incorrect procedure.

[2]  $x - 2$ , and appropriate work is shown.

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

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

or [1]  $x - 2$ , 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

[13] incorrect procedure.

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

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

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

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

[2]  $\frac{x+4}{4}$ , and appropriate work is shown.

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

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

or [1]  $\frac{x+4}{4}$ , 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

[15] incorrect procedure.

[4]  $\frac{-a}{2+a}$  or  $\frac{a}{-2-a}$ , and appropriate work is shown.

[3] Appropriate work is shown, but one computational or simplification error is made.

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

or [2] Appropriate work is shown, but one conceptual error is made, such as not recognizing that -1 is a factor.

[1] Appropriate work is shown, but one conceptual error and one computational or simplification error are made.

or  $\frac{-a}{2+a}$  or  $\frac{a}{-2-a}$ , 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

[16] incorrect procedure.

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[2]  $\frac{1}{x-1}$ , and appropriate work is shown.

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

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

or [1]  $\frac{1}{x-1}$ , 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

[17] incorrect procedure.

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[2]  $-\frac{s}{r(r+s)}$  or  $-\frac{s}{r^2+rs}$ , and appropriate

work is shown.

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

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

or [1] Appropriate work is shown, but the answer is not expressed in simplest form.

or [1]  $-\frac{s}{r(r+s)}$  or  $-\frac{s}{r^2+rs}$ , 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

[18] incorrect procedure.

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[4]  $-b$ , and appropriate work is shown.

[3] Appropriate work is shown, but one computational or simplification error is made.

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

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

or [2]  $\frac{5(a-b)-5(a+b)}{10}$  is written, but no

further correct work is shown.

[1] Appropriate work is shown, but one conceptual error and one computational or simplification error are made.

or [1]  $-b$ , 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

[19] incorrect procedure.

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