

MATH 115 (ELEMENTARY ALGEBRA) SAMPLE TEST CHAPTER 6**INSTRUCTOR: ANNE SISWANTO; TOTAL POINTS: 100; TIME: 70 MINUTES.** _____

Direction: No graphing calculator is allowed during test. Please write your answer in the answer blanks and show all work to get full credits.

Simplify, if possible.

1) $\frac{y^2 + 14y + 45}{y^2 + 17y + 72}$

1) _____

2) $\frac{a^2 - b^2 - 3a + 3b}{3a + 3b - 9}$

2) _____

Multiply.

3) $\frac{x - 8}{(x + 4)^2} \cdot \frac{x^2 - 4x - 32}{(x - 8)^2}$

3) _____

4) $\frac{z^2 + 4z + 4}{z^2 - 36} \cdot \frac{z - 6}{z + 2}$

4) _____

Divide.

$$5) \frac{z^2 + 6z + 8}{z^2 + 8z + 16} \div \frac{z^2 + 2z}{z^2 - 2z - 24}$$

5) _____

$$6) \frac{x^2 - 25}{x^2 - 2x + 1} \div \frac{8x + 40}{x^2 - 8x + 7}$$

6) _____

Add or subtract. Simplify your answer to lowest terms.

$$7) \frac{2x + 7}{x^2 + 4x + 3} - \frac{x + 4}{x^2 + 4x + 3}$$

7) _____

$$8) \frac{x^2 - 5x}{x^2 + 4x + 4} + \frac{4x - 6}{x^2 + 4x + 4}$$

8) _____

Perform the indicated operation. Simplify, if possible.

$$9) \frac{3}{r} + \frac{7}{r - 6}$$

9) _____

$$10) \frac{5x}{x^2 - 5x + 6} - \frac{20}{x^2 - 6x + 8}$$

10) _____

$$11) \frac{3}{4x - 3} - \frac{8}{3 - 4x}$$

11) _____

Solve and state the solution

$$12) \frac{6}{x + 7} = \frac{4}{x - 1}$$

12) _____

$$13) \frac{x + 4}{x - 10} = \frac{x + 1}{x - 5}$$

13) _____

$$14) \frac{3}{y+4} - \frac{7}{y-4} = \frac{4}{y^2-16}$$

14) _____

$$15) \frac{y+1}{y+6} - \frac{y}{y^2-36} = \frac{y-3}{y-6}$$

15) _____

$$16) \frac{x+2}{x^2-16} + \frac{x-3}{x^2-2x-8} = \frac{2x-3}{x^2+6x+8}$$

16) _____

$$17) \frac{y}{y+4} + \frac{8y+28}{y^2+7y+12} = \frac{4}{y+3}$$

17) _____

Solve using the quadratic formula.

$$18) 3x^2 + 12x + 2 = 0$$

18) _____

$$19) 2x^2 + 10x = -4$$

19) _____

Answer Key

Testname: M115T6S

1) $\frac{y + 5}{y + 8}$

2) $\frac{a - b}{3}$

3) $\frac{1}{x + 4}$

4) $\frac{z + 2}{z + 6}$

5) $\frac{z - 6}{z}$

6) $\frac{(x - 5)(x - 7)}{8(x - 1)}$

7) $\frac{1}{x + 1}$

8) $\frac{x - 3}{x + 2}$

9) $\frac{10r - 18}{r(r - 6)}$

10) $\frac{5(x - 6)}{(x - 3)(x - 4)}$

11) $\frac{11}{4x - 3}$

12) 17

13) $\frac{5}{4}$

14) -11

15) $\frac{4}{3}$

16) $\frac{5}{4}$

17) No solution

18) $\frac{-6 \pm \sqrt{30}}{3}$

19) $\frac{-5 \pm \sqrt{17}}{2}$