

MATH 115 (ELEMENTARY ALGEBRA) SAMPLE TEST CHAPTER 5
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.

The sample test is longer than the actual test.

Factor by grouping.

1) $24x^2 - 18x - 20x + 15$

1) _____

2) $42 - 6r - 7x + rx$

2) _____

Factor completely.

3) $x^2 - x - 20$

3) _____

4) $x^2 - 5x - 66$

4) _____

5) $4x^2 - 24x + 32$

5) _____

6) $2x^3 + 4x^2 - 30x$

6) _____

7) $3x^2 - 9xy - 12y^2$

7) _____

Factor completely.

8) $9x^2 + 12x + 4$

8) _____

9) $8x^2 - 6xt - 9t^2$

9) _____

Factor as completely as possible. If unfactorable, indicate that the polynomial is prime.

10) $6x^2 - 17x + 5$

10) _____

Factor completely.

11) $81x^2 - 25$

11) _____

12) $16k^2 - 121m^2$

12) _____

13) $25y^4 - 4$

13) _____

Factor.

14) $49x^2 - 112xy + 64y^2$

14) _____

Factor completely.

15) $8x^3 + y^3$

15) _____

Factor the polynomial completely.

16) $z^3 - 125p^3$

16) _____

Solve the equation.

17) $16k^2 - 25 = 0$

17) _____

18) $6d^2 + 20d + 16 = 0$

18) _____

19) $x^2 - x = 42$

19) _____

20) $11m^2 - 14m = 0$

20) _____

21) $3x(x + 5) = (2x - 6)(x + 5)$

21) _____

Set up the equation and Solve the problem.

22) The length of a rectangle is 10 inches more than its width. If 5 inches are taken from the length and added to the width, the figure becomes a square with an area of 121 square inches. What are the dimensions of the original figure?

22) _____

23) The product of two consecutive integers is 89 more than their sum. Find the integers.

23) _____

Answer Key

Testname: M115T5S

- 1) $(6x - 5)(4x - 3)$
- 2) $(7 - r)(6 - x)$
- 3) $(x + 4)(x - 5)$
- 4) $(x + 6)(x - 11)$
- 5) $4(x - 2)(x - 4)$
- 6) $2x(x - 3)(x + 5)$
- 7) $3(x + y)(x - 4y)$
- 8) $(3x + 2)(3x + 2)$
- 9) $(2x - 3t)(4x + 3t)$
- 10) $(2x - 5)(3x - 1)$
- 11) $(9x + 5)(9x - 5)$
- 12) $(4k + 11m)(4k - 11m)$
- 13) $(5y^2 + 2)(5y^2 - 2)$
- 14) $(7x - 8)^2$
- 15) $(2x + y)(4x^2 - 2xy + y^2)$
- 16) $(z - 5p)(z^2 + 5zp + 25p^2)$
- 17) $\left\{\frac{5}{4}, -\frac{5}{4}\right\}$
- 18) $\left\{-\frac{4}{3}, -2\right\}$
- 19) $\{-6, 7\}$
- 20) $\left\{\frac{14}{11}, 0\right\}$
- 21) $\{-5, -6\}$
- 22) 6 in. by 16 in.
- 23) 10, 11 or -9, -8