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Date: \_\_\_\_\_

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Course: Unten's FA2020 MA098  
Intermediate Algebra

Assignment: \*\*Factoring Unit\*\*

1. Find the greatest common factor.

$$a^3b^2, a^7b^2$$

The greatest common factor (GCF) of  $a^3b^2$  and  $a^7b^2$  is \_\_\_\_\_.  
(Simplify your answer. Use positive exponents only.)

2. Write the following in factored form by factoring out the greatest common factor.

$$70y^{11} + 15y^8$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $70y^{11} + 15y^8 =$  \_\_\_\_\_  
☐ B. There is no common factor other than 1.

3. Write in factored form by factoring out the greatest common factor (or a negative common factor if the coefficient of the term of greatest degree is negative).

$$x(c - 2) + t(c - 2)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $x(c - 2) + t(c - 2) =$  \_\_\_\_\_  
☐ B. There is no common factor except 1.

4. Factor by grouping.

$$5z^2 + 10z - az - 2a$$

$$5z^2 + 10z - az - 2a = \underline{\hspace{2cm}}$$

5. Factor the polynomial.

$$s^2 + 9s + 8$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A. The answer is \_\_\_\_\_. (Factor completely.)  
☐ B. The polynomial is prime.

6. Factor the given polynomial completely. If the polynomial cannot be factored, say that it is prime.

$$x^2 - 3x - 40$$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- ☐ A.  $x^2 - 3x - 40 =$
- ☐ B. The polynomial is prime.

7. Factor the trinomial.

$$v^2 - vg - 72g^2$$

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A.  $v^2 - vg - 72g^2 =$
- ☐ B. The polynomial is prime.

8. Factor the trinomial completely.

$$12m^2 - 13m - 4$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $12m^2 - 13m - 4 =$
- ☐ B. The trinomial is prime.

9. Factor the trinomial  $3a^2 + 8a + 5$  completely.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $3a^2 + 8a + 5 =$
- ☐ B. The trinomial is prime.

10. Factor the trinomial completely.

$$8v^2 - 70v + 17$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $8v^2 - 70v + 17 =$
- ☐ B. The polynomial is prime.

11. Factor the binomial completely.

$$4r^2 - 25$$

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A.  $4r^2 - 25 =$
- ☐ B. The polynomial is prime.

12. Factor.

$$9b^2 + 42bd + 49d^2$$

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A.  $9b^2 + 42bd + 49d^2 =$
- ☐ B. The polynomial is prime.

13. Factor completely.

$$v^3 - 64$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A.  $v^3 - 64 =$    
(Factor completely. Simplify your answer.)
- ☐ B. The polynomial is prime.

14. Solve.

$$x^2 - 22x + 21 = 0$$

The solution set is  $\{\rule{1cm}{0.4pt}\}$ .  
(Use a comma to separate answers as needed.)

15. Solve.

$$v^2 = 54 - 3v$$

The solution set is  $\{\rule{1cm}{0.4pt}\}$ .  
(Use a comma to separate answers.)

16. Solve.

$$a(a - 5) = 24$$

The solution set is  $\{\rule{1cm}{0.4pt}\}$ .  
(Use a comma to separate answers.)

17. Solve the equation.

$$(3x + 5)(2x^2 - 15x + 18) = 0$$

The solution set is  $\{\rule{1cm}{0.4pt}\}$ .  
(Simplify your answer. Use a comma to separate answers as needed.)

1.  $a^3b^2$

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2. A.  $70y^{11} + 15y^8 = \underline{5y^8(14y^3 + 3)}$

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3. A.  $x(c - 2) + t(c - 2) = \underline{(x + t)(c - 2)}$

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4.  $(z + 2)(5z - a)$

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5. A. The answer is  $\underline{(s + 8)(s + 1)}$ . (Factor completely.)

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6. A.  $x^2 - 3x - 40 = \underline{(x - 8)(x + 5)}$

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7. A.  $v^2 - vg - 72g^2 = \underline{(v + 8g)(v - 9g)}$

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8. A.  $12m^2 - 13m - 4 = \underline{(4m + 1)(3m - 4)}$

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9. A.  $3a^2 + 8a + 5 = \underline{(3a + 5)(a + 1)}$

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10. A.  $8v^2 - 70v + 17 = \underline{(4v - 1)(2v - 17)}$

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11. A.  $4r^2 - 25 = \underline{(2r + 5)(2r - 5)}$

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12. A.  $9b^2 + 42bd + 49d^2 = \underline{(3b + 7d)^2}$

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13. A.  $v^3 - 64 = \underline{(v - 4)(v^2 + 4v + 16)}$  (Factor completely. Simplify your answer.)

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14. 21,1

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15. 6, -9

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16. -3,8

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17.  $-\frac{5}{3}, \frac{3}{2}, 6$

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