

Module 12 Ch 12 Review Worksheet

0) What is the GCF of $14x^2y^3z$ and $21xy^2$

#1-9, Factor each completely:

1) $5x^2y + 15x^3y^5$

$5x^2y(1 + 3xy^4)$

2) $x^2 - 6x - 16$

$(x-8)(x+2)$

3) $y^2 - 49$

$(y-7)(y+7)$

4) $3w^2 + 10w + 8$

$(3w^2 + 6w) + (4w + 8)$
 $3w(w+2) + 4(w+2)$
 $(3w+4)(w+2)$

5) $3z^3 - 21z^2 + 24z$

$3z(z^2 - 7z + 8)$
 $3z(z-8)(z+1)$

6) $3w^2 - 12$

$3(w^2 - 4)$
 $3(w+2)(w-2)$

7) $x^2 + 3x - 12$

prime

8) $4z^2 + 7z - 2$

$(4z^2 + 8z) - (z + 2)$
 $4z(z+2) - 1(z+2)$
 $(4z-1)(z+2)$

9) $(10a^3 + 15a^2)(14a + 21)$

$5a^2(2a+3) \cdot 7(2a+3)$
 $(5a^2+7)(2a+3)$

#10 List the different methods of solving a quadratic equation

- a. Quadratic Formula
- b. Complete the Square
- c. Graphing
- d. Factor
- e. \checkmark

#11-18, Solve each quadratic equation. Try to use each method at least once.

10. $x^2 + 6x - 7 = 0$

$(x+7)(x-1)$
 $-7 \text{ \& } 1$

11. $x^2 + 9x = 22$

$x^2 + 9x - 22 = 0$
 $(x+11)(x-2)$
 $-11 \text{ \& } 2$

12. $m^2 - 8m = 9$

$m^2 - 8m + 16 = 25$
 $(m-4)^2 = 25$
 $m-4 = \pm 5$
 $m = 9 \text{ or } -1$

13. $x^2 + 10x - 2 = 0$

$x^2 + 10x = 2$
 $x^2 + 10x + 25 = 27$
 $(x+5)^2 = 27$
 $x+5 = \pm \sqrt{27}$
 $x = -5 \pm 3\sqrt{3}$
 $\{20, -10, 20\}$

14. $3a^2 + 4 = 10$

$3a^2 = 6$
 $a^2 = 2$
 $a = \pm \sqrt{2}$

15. $(b-2)^2 = 9$

$b-2 = \pm 3$
 $b = 5 \text{ or } -1$

16. $0 = 3x^2 - 5x + 4$

graphed
 no x-intercepts
 none

17. $x^2 + 5x = 7$

$x^2 + 5x - 7 = 0$
 $\frac{-5 \pm \sqrt{25 - 4(1)(-7)}}{2}$
 $\frac{-5 \pm \sqrt{53}}{2}$
 $1.14 \text{ \& } -6.14$

18. $2x^2 - 7 = 4x$

$2x^2 - 4x - 7$ graphed
 $-1.12 \text{ \& } 3.12$