

Algebra 1

Practice Quiz 8.4-8.6

NAME KEY

Factor each by General Trinomial (2 Points)

1. $2x^2 - 7x - 15$

$$\begin{array}{r} \frac{2x^2}{3x} \quad \frac{2x^2}{-10x} \\ (2x+3)(x-5) \end{array}$$

30
^
+3-10

2. $5x^2 + 13x - 6$

$$\begin{array}{r} \frac{5x^2}{15x} \quad \frac{5x^2}{-2x} \\ (x+3)(5x-2) \end{array}$$

30
^
+15-2

Factor each by The Difference of Two Squares (2 Points)

3. $x^2 - 49$

$$(x+7)(x-7)$$

4. $4x^2 - 36$

$$(2x+6)(2x-6)$$

1. _____
2. _____
3. _____

Factor each by Perfect Square Trinomial (2 Points)

5. $x^2 + 12x + 36$

$$(x+6)(x+6)$$

$$(x+6)^2$$

6. $x^2 - 16x + 64$

$$(x-8)(x-8)$$

$$(x-8)^2$$

4. _____
5. _____
6. _____

Factor each polynomial. Remember to use the factor methods in order: GCF, Grouping, General Trinomial, Difference of Two Squares, and Perfect Square Trinomial. If not factorable, write prime (2 Points)

7. $2x^2 - 6x - 10$

$$2(x^2 - 3x - 5)$$

8. $x^2 - 25$

$$(x+5)(x-5)$$

7. _____
8. _____
9. _____

9. $8x^2 + 13x - 6$

$$\begin{array}{r} \frac{8x^2}{16x} \quad \frac{8x^2}{-3x} \\ (x+2)(8x-3) \end{array}$$

48
^
+16-3

10. $x^2 - 12x + 36$

$$(x-6)(x-6)$$

$$(x-6)^2$$

10. _____
11. _____
12. _____

11. $6x^2 + x - 12$

$$\begin{array}{r} \frac{6x^2}{9x} \quad \frac{6x^2}{-8x} \\ (2x+3)(3x-4) \end{array}$$

72
^
+9-8

12. $9x^2 - 64$

$$(3x+8)(3x-8)$$

Points (24) _____

Factor each polynomial. Remember to use the factor methods in order: GCF, Grouping, General Trinomial, Difference of Two Squares, and Perfect Square Trinomial. If not factorable, write prime (2 Points)

13. $6x^2 - 9x - 60$

$3(2x^2 - 3x - 20)$
 $\frac{2x^2}{-8x} \quad \frac{2x^2}{5x}$ 40
 $-8 \quad +5$
 $3(x-4)(2x+5)$

14. $4x^2 - 64y^2$

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

15. $5x^2 + 17x + 14$

$\frac{5x^2}{7x} \quad \frac{5x^2}{10x}$ 70
 $+7 \quad +10$
 $(5x+7)(x+2)$

16. $3x^2 + 19x + 6$

$\frac{3x^2}{1x} \quad \frac{3x^2}{18x}$ 18
 $+3 \quad +18$
 $(3x+1)(x+6)$

Solve each equation. Check your solutions. (3 Points)

17. $(2x + 7)(x - 6) = 0$

$2x+7=0 \quad x-6=0$
 $2x=-7 \quad x=6$
 $x = -\frac{7}{2} \quad x=6$

18. $4x^2 - 5x - 6 = 0$

$\frac{4x^2}{3x} \quad \frac{4x^2}{-8x}$ 24
 $+3 \quad -8$
 $(4x+3)(x-2) = 0$
 $4x+3=0 \quad x-2=0$
 $x = -\frac{3}{4} \quad x=2$

19. $2x^2 - 18 = 0$

$2(x^2 - 9) = 0$
 $2(x+3)(x-3) = 0$
 $2=0 \quad x+3=0 \quad x-3=0$
 $x = -3 \quad x=3$

20. $x^2 + 18x + 81 = 0$

$(x+9)(x+9) = 0$
 $x+9=0$
 $x = -9$

21. $6x^2 - 5x - 4 = 0$

$\frac{6x^2}{3x} \quad \frac{6x^2}{-8x}$ 24
 $+3 \quad -8$
 $(2x+1)(3x-4) = 0$
 $2x+1=0 \quad 3x-4=0$
 $2x=-1 \quad 3x=4$
 $x = -\frac{1}{2} \quad x = \frac{4}{3}$

22. $x^2 + 2x = 15$

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

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

Points (26) _____

SHORTCUT

$\frac{3}{4} \quad \frac{-8}{4}$

$-\frac{3}{4}, 2$