Name: Date:
Instructor: Section:

Practice Set 5.5

Use the choices to fill in each blank.

factors	sum	quotient	premium
prime	difference	product	multiples

1. To factor a trinomial of the form $x^2 + bx + c$, find two numbers whose _____ is c and whose _____ is b.

2. To factor a trinomial of the form $ax^2 + bx + c$, $a \neq 1$, using trial and error, list all pairs of _____ of a and c. Try various combinations of these _____ until the correct middle term, bx, is found.

3. To factor a trinomial of the form $ax^2 + bx + c$, $a \neq 1$, using grouping, find two numbers whose _____ is $a \cdot c$ and whose _____ is b.

4. A polynomial that cannot be factored is called _____.

Factor each trinomial completely. If the polynomial is prime, so state.

5. $x^2 + 10x + 24$

6. $x^2 - 4x - 21$

5. _____

6. _____

7. $x^2 - 6x - 16$

8. $x^2 + 6x - 27$

7. _____

8. _____

9. $2x^3 + 6x^2 - 108x$

10. $3x^3 + 3x^2 - 36x$

9. _____

10. _____

11. $5x^3 + 30x^2 + 40x$

12. $4x^3 - 8x^2 - 140x$

11. _____

12. _____

13. $2x^2 + 19x + 24$

14. $3x^2 - 4x - 32$

13. _____

14. _____

15. $6x^2 + x - 1$

16. $6x^2 + 17x + 12$

15. _____

16. _____

17. $12x^2 + 7x - 12$

18. $30x^2 + 53x + 21$

17. _____

18. _____

19. $12x^2 + 34x + 24$

20. $36x^2 - 15x - 9$

19. _____

20. _____

21. $30x^2 - 25x - 30$

22. $48x^2 - 128x - 140$

21. _____

22. _____

Factor completely.

23. $x^4 + 11x^2 + 24$ **23.**_____

24. $y^4 + y^2 - 42$ **24.**_____

25. $a^4 + 2a^2 - 24$ **25.**_____

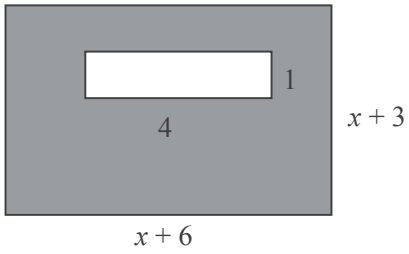
26. $6a^4 + 7a^2 - 20$ **26.**_____

27. $x^6 + 3x^3 - 54$ **27.**_____

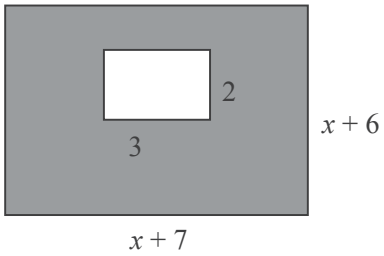
28. $2x^4y^4 + x^3y^3 - 15x^2y^2$ **28.**_____

Find an expression, in factored form, for the area of the shaded region.

29. **29.**_____



30. **30.**_____



Problem Solving

31. Find all integer values of b for which $3x^2 + bx - 5$ is factorable. **31.**_____

32. Find all integer values of b for which $2x^2 + bx - 11$ is factorable. **32.**_____