

Name: _____ Period: _____ Date: _____

Worksheet 11-1

Allen

Introduction to Exponents & Order of Operations

Unit 11

A. Make a factor tree for each of the following numbers.

B. Write your answer in exponential form.

1. 24

3. 27

5. 36

2. 25

4. 30

6. 40

Use the Rules of Divisibility and your Prime Numbers Chart to tell whether each number is prime or composite.

7. 12

10. 11

8. 17

11. 30

9. 21

12. 45

Write each expression in exponential form.

13. $4 \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b$

16. $pqrpq$

14. $x \cdot y \cdot x \cdot x \cdot y \cdot x$

17. $7abc \cdot 3b$

15. $2 \cdot u \cdot u \cdot 3 \cdot v \cdot v \cdot u \cdot u$

18. $cdccddcf$

Simplify each expression.

19. 4^3

21. 7^2

23. $\sqrt{121}$

20. $\sqrt{64}$

22. 2^5

24. $\sqrt{81}$

Simplify each exponent.

	Exp.	Simplified	Exp.	Simplified
25.	-2^2		$(-2)^2$	
26.	-2^3		$(-2)^3$	
27.	-2^4		$(-2)^4$	

Simplify each exponent.

28. -4^3

30. $(-5)^3$

32. -3^4

29. $(-3)^2$

31. -8^2

33. $(-6)^3$

Use the order of operations to evaluate.

34. $-6^2 + 2 \cdot 3$

37. $(7-9)^2 + 36 \div 4$

40. $\frac{x^2}{2}$ for $x = -4$

35. $(-3)^3 - 9 + 27 \div 3$

38. $24 + 5(14-6)^2 \div 8$

41. $\frac{c^3}{2}$ for $x = -2$

36. $8 + 2(3-6)^2$

39. $x^2 + 2x + 7$ for $x = 4$

42. $\sqrt{49} + 8$