Section 1.2 – Exponents and the Order of Operations

Problem Set 3

Evaluate the following exponential expressions.

1. $-6^2 / (-6)^2$

2. $3^4 \cdot 1^3$

3. 4^4

4. -3^4

5. $3^2 \cdot 4^3$

6. 2^5

7. $2^2 \cdot 3^2 \cdot 2^2$

8. $3^4 \cdot 2^4$

9. $(-1.3)^2$

10. $\left(\dfrac{1^2 + 1}{3^2}\right)^2$

11. $\dfrac{-3^2}{3^1}$

12. $\left(\dfrac{4}{3}\right)^2$

Simplify the following expressions.

13. $(4 - 1)^2$

14. $(8 - 4) / 2$

15. $1^2 - 2^3$

16. $(12 - 5) / 3$

17. $3^2 + 2(3 + 6 / 2)$

18. -4^4

19. $-2 [10 - 4 (3^3 - 2^4)] / 2$

20. $-2 (1 + 3^2) - 2 (3 - 1)$

21. $\{3^2 + (21 / 3 \cdot 7)\} + 5^2$

22. $4 \cdot (1 + 5^2 - 5) \div 3 - 4 [1^2 + 45]$

23. $36 / 3 \cdot 4$

24. $[13 + (14 - 5)^2] + 18 / 9$

25. $(-3)^2 - 2^2$

26. $(6 - 1)^2 + (1 + 6)^2$

27. $\dfrac{1^2 - 1}{4 - 5}$

28. $\dfrac{-4(1^2 - 1^3 + (-1)^4)}{2(1^2 + 1^3 + 1^4)}$

Calculate the following values.

29. Calculate the area of a rectangle whose sides are 12 cm by 9 cm.

30. Calculate the area of a rectangle whose sides are 5.5 in. by 3.1 in.

31. Calculate the area of a square whose sides are all 10 ft.

32. If a seat cushion is 13" x 13" x 2", how much upholstery would be required to cover it?

33. The sides of a room are 8' x 9' and 11.5' x 8'. What's the total surface area of the room's walls?