

# Power Review



## Review for Chapter 2 Test

1. Write the base of  $-(-5)^3$ . Evaluate
2. Evaluate:  $6^5$
3. Which answer is negative?
  - i)  $(-6)^6$
  - ii)  $-(6)^6$
  - iii)  $-(-6)^6$
4. Evaluate:  $(-13)^0$
5. Write  $(3 \times 10^4) + (5 \times 10^3) + (7 \times 10^2) + (4 \times 10^1) + (6 \times 10^0)$  in standard form.
6. Which number is the greatest?
  - i)  $(5 \times 10^3) + (6 \times 10^2) + (4 \times 10^1) + (7 \times 10^0)$
  - ii) 5645
  - iii)  $(5 \times 10^3) + (7 \times 10^2) + (8 \times 10^0)$
  - iv) 5780

5. Write  $(3 \times 10^4) + (5 \times 10^3) + (7 \times 10^2) + (4 \times 10^1) + (6 \times 10^0)$  in s
6. Which number is the greatest?
- i)  $(5 \times 10^3) + (6 \times 10^2) + (4 \times 10^1) + (7 \times 10^0)$
  - ii) 5645
  - iii)  $(5 \times 10^3) + (7 \times 10^2) + (8 \times 10^0)$
  - iv) 5780
7. Write the product of  $5^3 \times 5^4$  as a single power.
8. Write  $[(-4) \times (-5)]^3$  as a product of powers.
9. Write  $\left(\frac{11}{9}\right)^5$  as a quotient of powers.
10. Write  $[(-7) \times 3]^4$  as a product of powers.
11. Write  $\left(\frac{7}{3}\right)^3$  as a quotient of powers.
12. Evaluate:  $[(-5)^0]^3$
13. Simplify, then evaluate.  $(2^4 \times 2^2)^2$

14. Write the base and the exponent of this power:  $(-5)^6$  Evaluate.
15. Write  $-(-4) \times (-4) \times (-4) \times (-4) \times (-4)$  as a power, then evaluate the power.
16. Write 4865 using powers of 10.
17. State which operation you would do first to evaluate  $(-4)^2 + 3 \times 7$ .
18. State which operation you would do first to evaluate  $(6)^0 + [10 + (-2)]^2 - 2$ .
19. Evaluate:  $70 \times 2^2 + 80 \times 3^2 \times 0.75$
20. Identify, then correct, any errors in the work below.
- $$\begin{aligned} & (5 + 3)^2 \times 4 + 5 \\ & = 8^2 \times 9 \\ & = 64 \times 9 \\ & = 576 \end{aligned}$$
21. Write the product of  $7^6 \times 7^7$  as a single power.

$$\begin{aligned} &= 8^2 \times 9 \\ &= 64 \times 9 \\ &= 576 \end{aligned}$$

21. Write the product of  $7^6 \times 7^7$  as a single power.

22. Write the product of  $(-6)^6 \times (-6)^7$  as a single power.

23. Write the quotient of  $\frac{(-7)^9}{(-7)^5}$  as a single power.

24. Evaluate:  $3^3 \times 3^4 - 3^5 \times 3$

25. Simplify, then evaluate.  
 $(-2)^4 \times (-2)^6 + (-2)^6$

26. Simplify, then evaluate.

$$\frac{(-2)^6 \times (-2)^2}{(-2)^3 \times (-2)^0}$$

27. Evaluate:  $5^2 + 6^3 + 5^2 + 6^3 + 5^2 + 6^3$

28. Simplify, then evaluate.

$$\frac{(2^4)^3 \times (2^2)^4}{(2^4 \times 2^4)^2}$$

29. Simplify, then evaluate.

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

30. Simplify, then evaluate.

$$[(-2)^4 \times (-2)^3] - [(-3)^4 + (-3)^3]$$

31. Simplify.  $\frac{[(-14)^9]^7}{[-(14)^4]^3}$

32. Evaluate:  $2^4 \times 3^3 \times 5^2$

33. Evaluate:  $(7)^5 + (-5)^4 - (6)^2$

34. A square has area  $250\,000\text{ cm}^2$ . Write the side length as a power of 10. Determine the side length in metres.

35. A rectangle has a side lengths of  $10^6$  and  $10^8$ .

Write the expression to show the area and the perimeter for the rectangle .





$$4. (-13)^0 = 1$$

$$5. (3 \times 10^4) + (5 \times 10^3) + (7 \times 10^2) + (4 \times 10^1) + (6 \times 10^0)$$

$$35746$$

$$6. i) (5 \times 10^3) + (6 \times 10^2) + (4 \times 10^1) + (7 \times 10^0) = 5647$$

$$ii) 5645$$

$$iii) (5 \times 10^3) + (7 \times 10^2) + (8 \times 10^0) = 5708$$

$$*iv) 5780$$

$$7. 5^3 \times 5^4$$

$$5^7$$

$$8. [(-4) \times (-5)]^3$$

$$(-4)^3 \times (-5)^3$$

$$9. \left(\frac{11}{9}\right)^5 = \frac{11^5}{9^5}$$

$$10. [(-7) \times 3]^4$$

$$(-7)^4 \times 3^4$$

$$11. \left(\frac{7}{3}\right)^3 = \frac{7^3}{3^3}$$

exponents first

$$12. \left[(-5)^0\right]^3$$

brackets first

$$19. 70(-5)^0 + 90 \times 3^2 \times 0.75$$

$$70 \cdot 1 + 90 \times 9 \times 0.75$$

$$13. (2^4 \times 2^2)^2$$

$$(2^6)^2$$

$$2^{12}$$

14.  $(-5)^6$  Base = -5  
exponent 6 Evaluate:  $(-5)^6$   
+15625

15.  $-(-4) \times (-4) \times (-4) \times (-4) \times (-4)$

$-(-4)^5$

$-(-1024)$

1024

16. 4865

$(4 \times 10^3) + (8 \times 10^2) + (6 \times 10^1) + (5 \times 10^0)$

$$(4 \times 10^3) + (8 \times 10^2) + (6 \times 10^1) + (5 \times 10^0)$$

$$17. (-4)^2 + 3 \times 7$$

exponents first

$$18. (6)^0 + [10 \div (-2)]^2 - 2$$

brackets first

$$19. 70 \times 2^2 + 80 \times 3^2 \times 0.75$$

$$70 \times 4 + 80 \times 9 \times 0.75$$

$$280 + 540$$

$$820$$

Find the mistake

20.  $(5+3)^2 \times 4 + 5$

$8^2 \times 9$  *mistake*

$64 \times 9$

$576$

$(5+3)^2 \times 4 + 5$

$8^2 \times 4 + 5$

$64 \times 4 + 5$

$256 + 5$   
 $261$

21.  $7^6 \times 7^7$

$7^{13}$

$$22. \frac{(-6)^6 \times (-6)^7}{(-6)^{13}}$$

$$23. \frac{(-7)^9}{(-7)^5}$$

$$(-7)^4$$

$$24. 3^3 \times 3^4 - 3^5 \times 3$$

$$3^7 - 3^6$$

$$2187 - 729$$

$$1458$$

$$\begin{aligned} 25. \quad & (-2)^4 \times (-2)^6 \div (-2)^6 \\ & (-2)^{10} \div (-2)^6 \\ & (-2)^4 \\ & = 16 \end{aligned}$$

$$\begin{aligned} 26. \quad & \frac{(-2)^6 \times (-2)^2}{(-2)^3 \times (-2)^0} \\ & \frac{(-2)^8}{(-2)^3} \\ & (-2)^5 \end{aligned}$$



$$27. 5^2 + 6^3 + 5^2 + 6^3 + 5^2 + 6^3$$

$$25 + 216 + 25 + 216 + 25 + 216$$

$$723$$

28.

$$\frac{(2^4)^3 \times (2^2)^4}{(2^4 \times 2^4)^2}$$

$$\frac{2^{12} \times 2^8}{(2^8)^2}$$

$$\frac{2^{12} \times 2^8}{2^{16}} = \frac{2^{20}}{2^{16}} = 2^4 = 16$$

$$29. (4^6 \div 4^3)^2 - (2^8 \div 2^6)^2$$

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

$$4^6 - 2^4$$

$$4096 - 16$$

$$4080$$

$$30. [(-2)^4 \times (-2)^3] - [(-3)^4 \div (-3)^3]$$

$$(-2)^7 - (-3)^1$$

$$-128 - -3$$

$$-125$$

-125

$$31. \frac{[(-14)^9]^7}{[(-14)^4]^3}$$
$$\frac{(-14)^{63}}{(-14)^{12}}$$
$$(-14)^{51}$$

$$32. \frac{2^4 \times 3^3 \times 5^2}{16 \times 27 \times 25}$$

10800

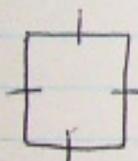
$$33. \quad (7)^5 + (-5)^4 - (6)^2$$

$$16807 + 625 - 36$$

$$17432 - 36$$

$$17396$$

34.

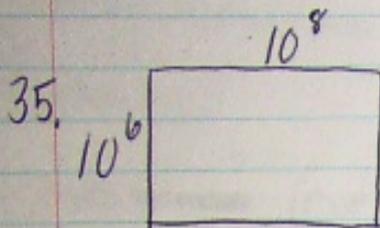


$$A = 250\,000$$

$$\_ \times \_ = 250\,000$$

$$500 \times 500$$

$$(5 \times 10^2) \times (5 \times 10^2)$$



$$\begin{aligned} \text{Area} &= L \times W \\ &= 10^6 \times 10^8 \\ &= 10^{14} \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= s + s + s + s \\ &= 10^8 + 10^6 + 10^8 + 10^6 \end{aligned}$$