

Exercise 1.4

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

2) $-(5)^2 \cdot (7)^5$

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

4) $-x^3$

5) $x^3 \cdot (-y)^2$

6) $a \cdot b^{\cancel{4}5}$

7) $3^4 = 3 \cdot 3 \cdot 3 \cdot 3$
 $= 9 \cdot 3 \cdot 3$
 $= 9 \cdot 9$
 $= \boxed{81}$

8) $2^3 = 2 \cdot 2 \cdot 2$
 $= \boxed{8}$

9) $5^2 = \boxed{25}$

10) $(-2)^2 = (-2)(-2)$
 $= \boxed{4}$

11) $-4^4 = -4 \cdot 4 \cdot 4 \cdot 4$
 $= -16 \cdot 4 \cdot 4$
 $= -64 \cdot 4$
 $= \boxed{-256}$

12) $-(5)^2 = \boxed{-25}$

13) a^2 for $a=9$
 $(9)^2 = \boxed{81}$

14) $a^2 b^3$ for $a=-2, b=3$

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

$$= (-2)(-2)(3)(3)(3)$$

$$= 4 \cdot 27 = \boxed{108}$$

15) For -2^4 , the exponent does not affect the negative sign.

$$-2^4 = -2 \cdot 2 \cdot 2 \cdot 2 = -16$$

For $(-2)^4$, the exponent does affect the negative sign.

$$(-2)^4 = (-2)(-2)(-2)(-2) = \boxed{16}$$

16) $3 + 2 \cdot 7$
 $= 3 + 14$
 $= \boxed{17}$

17) $-4 - 6 \div 3$
 $= -4 - \frac{6}{3}$
 $= -4 - 2$
 $= \boxed{-6}$

18) $-2^3 \cdot 3 + 2$
 $= -8 \cdot 3 + 2$
 $= -24 + 2$
 $= \boxed{-22}$

19) $7 + (-6) - 4$
 $= 1 - 4$
 $= \boxed{-3}$

20) $12 \div 4 \cdot 6$
 $= 3 \cdot 6$
 $= \boxed{18}$

21) $7 \cdot 4 + 6 - 3$
 $= 28 + 6 - 3$
 $= 34 - 3$
 $= \boxed{31}$

22) $(2+7)^2 - 7$
 $= (9)^2 - 7$
 $= 81 - 7$
 $= \boxed{74}$

Exercise 1.4 cont.

$$23) -3^2 - (7-8)$$

$$= -9 - (-1)$$

$$= -9 + 1$$

$$= \boxed{-8}$$

$$24) 4 - 7 + 3(5-3)^3$$

$$= 4 - 7 + 3(2)^3$$

$$= 4 - 7 + 3 \cdot 8$$

$$= 4 - 7 + 24$$

$$= -3 + 24$$

$$= \boxed{21}$$

$$25) \frac{2^4 - 1}{7 - 2}$$

$$= \frac{16 - 1}{7 - 2}$$

$$= \frac{15}{5}$$

$$= \boxed{3}$$

$$26) 5 \cdot (2-3) + 7^2 - 5 \cdot 4 + 3$$

$$= 5 \cdot (-1) + 7^2 - 5 \cdot 4 + 3$$

$$= 5 \cdot (-1) + 49 - 20 + 3$$

$$= -5 + 49 - 20 + 3$$

$$= 44 - 20 + 3$$

$$= 24 + 3$$

$$= \boxed{27}$$

$$27) ab - 2b \text{ for } a = -3, b = -2$$

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

$$= (-3)(4) - 2(-2)$$

$$= -12 - (-4)$$

$$= -12 + 4$$

$$= \boxed{-8}$$