

A.APR.A.1: Multiplication of Powers

- 1 The expression $2^3 \cdot 4^2$ is equivalent to
 - 1) 2^7
 - 2) 2^{12}
 - 3) 8^5
 - 4) 8^6

- 2 Which expression is equivalent to $3^3 \cdot 3^4$?
 - 1) 9^{12}
 - 2) 9^7
 - 3) 3^{12}
 - 4) 3^7

- 3 The expression $3^2 \cdot 3^3 \cdot 3^4$ is equivalent to
 - 1) 27^9
 - 2) 27^{24}
 - 3) 3^9
 - 4) 3^{24}

- 4 The product of $3x^5$ and $2x^4$ is
 - 1) $5x^9$
 - 2) $5x^{20}$
 - 3) $6x^9$
 - 4) $6x^{20}$

- 5 The product of $2x^3$ and $6x^5$ is
 - 1) $10x^8$
 - 2) $12x^8$
 - 3) $10x^{15}$
 - 4) $12x^{15}$

- 6 Which expression represents $(3x^2y^4)(4xy^2)$ in simplest form?
 - 1) $12x^2y^8$
 - 2) $12x^2y^6$
 - 3) $12x^3y^8$
 - 4) $12x^3y^6$

- 7 The product of $4x^2y$ and $2xy^3$ is
 - 1) $8x^2y^3$
 - 2) $8x^3y^3$
 - 3) $8x^3y^4$
 - 4) $8x^2y^4$

- 8 The product of $6x^3y^3$ and $2x^2y$ is
 - 1) $3xy^2$
 - 2) $8x^5y^4$
 - 3) $12x^5y^4$
 - 4) $12x^6y^3$

- 9 The expression $(x^2z^3)(xy^2z)$ is equivalent to
 - 1) $x^2y^2z^3$
 - 2) $x^3y^2z^4$
 - 3) $x^3y^3z^4$
 - 4) $x^4y^2z^5$

10 The product of $3x^2y$ and $-4xy^3$ is

- 1) $-12x^3y^4$
- 2) $12x^3y^4$
- 3) $-12x^2y^3$
- 4) $12x^2y^3$

11 What is the product of $10x^4y^2$ and $3xy^3$?

- 1) $30x^4y^5$
- 2) $30x^4y^6$
- 3) $30x^5y^5$
- 4) $30x^5y^6$

12 What is the product of $3a^2b$ and $-2ab^3$?

- 1) a^2b^3
- 2) a^3b^4
- 3) $-6a^2b^3$
- 4) $-6a^3b^4$

13 The expression $(-2a^2b^3)(4ab^5)(6a^3b^2)$ is equivalent to

- 1) $8a^6b^{30}$
- 2) $48a^5b^{10}$
- 3) $-48a^6b^{10}$
- 4) $-48a^5b^{10}$

14 What is the product of $\frac{1}{3}x^2y$ and $\frac{1}{6}xy^3$?

- 1) $\frac{1}{2}x^2y^3$
- 2) $\frac{1}{9}x^3y^4$
- 3) $\frac{1}{18}x^2y^3$
- 4) $\frac{1}{18}x^3y^4$

15 The product of $6x^a$ and x is

- 1) $6x^a$
- 2) $6x^{a+1}$
- 3) $6x^{a^2}$
- 4) $6x^{2a}$

16 If $x = 5^a$, then the value of $5x$ is

- 1) $x + 1$
- 2) 6^a
- 3) $a + 5$
- 4) 5^{a+1}

17 The expression 5^{a+2b} is equivalent to

- 1) $5^a \bullet 5^2 \bullet 5^b$
- 2) $5^a \bullet 25^b$
- 3) 25^{2a+b}
- 4) 25^{a+2b}

18 Which equation is always true?

- 1) $x^2 \bullet x^3 = x^5$
- 2) $3^x \bullet 3^2 = 9^{2x}$
- 3) $-z^2 = z^2$
- 4) $7^a \bullet 7^b = 7^{ab}$

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Answer Section

1 ANS: 1

$$2^3 \cdot 4^2 = 2^3 \cdot (2^2)^2 = 2^3 \cdot 2^4 = 2^7$$

REF: 069911a

2 ANS: 4 REF: 011020ia

3 ANS: 3 REF: 060312a

4 ANS: 3 REF: 010306a

5 ANS: 2 REF: 080001a

6 ANS: 4 REF: 080903ia

7 ANS: 3 REF: 089906a

8 ANS: 3 REF: 061401ia

9 ANS: 2 REF: 010008a

10 ANS: 1 REF: 010205a

11 ANS: 3 REF: 080605a

12 ANS: 4 REF: 081401ia

13 ANS: 3 REF: 010910a

14 ANS: 4 REF: 060604a

15 ANS: 2 REF: 060328siii

16 ANS: 4 REF: 018926siii

17 ANS: 2

$$5^{a+2b} = 5^a \cdot 5^{2b} = 5^a \cdot 25^b$$

REF: 082422ai

18 ANS: 1 REF: 062403ai