

## Independent Practice

## Expressions and Operations A.10, A.11

Read and solve.

1. If  $a = 0$ ,  $(a^{-2})(a^2) = ?$

- A.  $-\frac{1}{2}$
- B. 1
- C. 0
- D. 2

2. The sun is about  $1.5 \times 10^8$  kilometers from Earth. If light travels about  $3 \times 10^5$  kilometers per second, about how many seconds does it take light from the sun to reach Earth?

- A. 5
- B. 50
- C. 500
- D. 5,000

3. The area of a rectangle is given by  $A = 6x^2y + 4y^2x$  and the width of the rectangle is  $w = 2xy$ . What is the length,  $l$ , of the rectangle if  $l = \frac{A}{w}$  ?

- A.  $l = 3x^2y + 2y^2x$
- B.  $l = 6x^2y + 4y^2x + 2xy$
- C.  $l = 4x + 2y$
- D.  $l = 3x + 2y$

4. Which expression is equivalent to  $\frac{6x^3 - 3x^2 + 5x}{3x}$  ?

- A.  $x + 5$
- B.  $-2x^2 + 5x$
- C.  $2x^2 - x + \frac{5}{3}$
- D.  $2x - 3 + \frac{5}{3}$

5. Which is equivalent to  $(x^3)^4$  ?

- A.  $x$
- B.  $x^7$
- C.  $x^{12}$
- D.  $4x^3$

### Independent Practice--continued

6. The population of Asia is about  $3.4 \times 10^9$ . The population of Africa is about  $7 \times 10^8$ . About how many more people live in Asia than live in Africa?

- A. 27,000,000
- B. 270,000,000
- C. 360,000,000
- D. 2,700,000,000

7. Which expression is equivalent to  $\frac{8x^4 - 2x^2}{2x^2}$  ?

- A.  $4x^2$
- B.  $6x^2$
- C.  $4x^2 - 1$
- D.  $6x^2 - 1$

8. Which is equivalent to  $\frac{b^6}{b^2}$  ?

- A.  $\frac{1}{b^3}$
- B.  $b^3$
- C.  $b^4$
- D.  $b^8$

9. Which is equivalent to  $(6x^4y^5)^2$  ?

- A.  $6x^4y^{10}$
- B.  $6x^6y^7$
- C.  $12x^8y^{10}$
- D.  $36x^8y^{10}$

10. Which is equivalent to  $(6x^5)(3x^4)$  ?

- A.  $2x$
- B.  $9x^9$
- C.  $18x^9$
- D.  $18x^{20}$

## Independent Practice—continued

Read and solve.

11. Which is equivalent to  $(3a + b)(2a - 4b)$ ?

- A.  $5a - 3b$
- B.  $6a^2 - 4b^2$
- C.  $5a^2 - 10ab + 5ab^2$
- D.  $6a^2 - 10ab - 4b^2$

12. Which is equivalent to  $(5x^2 + 4x + 1) + (-7x + 2)$ ?

- A.  $-2x^2 + 6x + 1$
- B.  $5x^2 - 3x - 1$
- C.  $5x^2 - 3x + 3$
- D.  $5x^2 + 11x + 3$

13. Which is equivalent to  $(7g + 8h - 9) + (-g - 3h - 6k)$ ?

- A.  $6g + 5h - 15k$
- B.  $6g + 5h - 6k - 9$
- C.  $-7 - 2h + 54k$
- D.  $8g + 11h + 6k - 9$

14. Which is equivalent to  $(3m + 6n - 5) - (2m - 3n + 6)$ ?

- A.  $m - 3n + 1$
- B.  $m - 3n - 1$
- C.  $m + 9n - 11$
- D.  $-5m - 9n - 11$

15. Which is equivalent to  $(7x - 2)(3x + 4)$ ?

- A.  $10x^2 + 6x + 2$
- B.  $21x^2 - 8$
- C.  $21x^2 + 22x - 8$
- D.  $21x^2 + 28x - 2$

**Independent Practice—continued**

16. Which is equivalent to  $(y - 12)(y + 12)$  ?

- A.  $y^2 - 144$
- B.  $y^2 + 144$
- C.  $y^2 - 24y - 144$
- D.  $y^2 + 24y - 144$

17. Which is equivalent to  $(5x^2 + 17x - 14) + (-3x^2 - 8x + 6)$  ?

- A.  $2x^2 + 9x - 8$
- B.  $2x^4 + 9x^2 - 8$
- C.  $8x^2 + 25x + 20$
- D.  $-15x^2 - 136x - 84$

18. Which is equivalent to  $(10x + 12y)^2$  ?

- A.  $10x^2 + 12y^2$
- B.  $100x^2 + 120xy + 144y^2$
- C.  $100x^2 + 144y^2$
- D.  $100x^2 + 240xy + 144y^2$

19. Which is equivalent to  $(18x^4 - 6x^3 + 7x - 6) - (4x^4 + 6x^2 - 6x + 15)$  ?

- A.  $-21x^9$
- B.  $15x^9 - 21$
- C.  $12x^4 + x + 9$
- D.  $14x^4 - 6x^3 - 6x^2 + 13x - 21$

20. Which is equivalent to  $(x - 6)(3x - 4)$  ?

- A.  $3x^2 - 24$
- B.  $3x^2 + 24$
- C.  $3x^2 - 22x + 24$
- D.  $3x^2 + 14x - 24$