

Independent Practice

Expressions and Operations

A.2

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 1.5×10^8 kilometers from Earth. If light travels about 3×10^5 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 3.4×10^9 . The population of Africa is about 7×10^8 . 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. $3x^2 + 14x - 24$