

Directions: Please choose the best answer choice for each of the following questions.

1. Simplify the following.

$$(x^4)^2$$

- A. x^2
- B. x^6
- C. x^8
- D. x^{16}

Answer Choice Rationale

- A. This answer divides the exponent 4 by 2.
- B. This answer adds the exponents 4 and 2.
- C. Correct answer.
- D. This answer squares the exponent 4.

ItemID A2K.1021110
 Correct C
 Standard(s) MA.9-12.MA.912.A.4.1

2. Simplify the expression.

$$x(4x^4)^3$$

- A. $64x^7$
- B. $64x^8$
- C. $64x^{12}$
- D. $64x^{13}$

Answer Choice Rationale

- A. This answer is the result of simplifying the exponents by adding 3 and 4 and disregarding the factor of x .
- B. This is the result of simplifying the exponents by adding 1, 3, and 4.
- C. This is the result of simplifying the exponents by multiplying 1, 3, and 4.
- D. Correct answer

ItemID A2K.1021467
 Correct D
 Standard(s) MA.9-12.MA.912.A.4.1

3. $15b^0c^8d^{-6} \times 7bc^3d^5 =$

- A. $\frac{105c}{bd}$
- B. $\frac{105b}{d^{11}}$
- C. $\frac{105bc^{11}}{d}$
- D. $\frac{105c^5}{bd^{11}}$

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. Correct
- D. No rationale available

ItemID A2KC.1086876
 Correct C
 Standard(s) MA.9-12.MA.912.A.4.1

4. $\frac{(6p^2q^3r)^2}{18p^3q^7r} =$

- A. $2p^5q^{13}r^3$
- B. $2pr^2$
- C. $\frac{pq^3r}{3q}$
- D. $\frac{2pr}{q}$

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2KC.1086859
 Correct D
 Standard(s) MA.9-12.MA.912.A.4.1

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5. What is $72a^4b^6$ divided by $3^2a^2b^3$?
- A. $2^2a^2b^2$
 - B. $2^3a^2b^3$
 - C. $8^2a^2b^3$
 - D. $24a^2b^3$

Answer Choice Rationale

- A. No rationale available
- B. Correct
- C. No rationale available
- D. No rationale available

ItemID A2KC.1134298
 Correct B
 Standard(s) MA.9-12.MA.912.A.4.1

6. Which of the following is equivalent to $(4x + 1) + (6 - 2x)$?
- A. $2x + 7$
 - B. $6x + 6$
 - C. $6x + 7$
 - D. $2x + 6$

Answer Choice Rationale

- A. Correct
- B. No rationale available
- C. No rationale available
- D. No rationale available

ItemID A2KC.1087195
 Correct A
 Standard(s) MA.9-12.MA.912.A.4.2

7. $(2x^2 - 3x + 4) - (3x^2 - x + 2) =$
- A. $x^2 - 2x - 2$
 - B. $-x^2 - 4x + 2$
 - C. $-x^2 - 2x + 2$
 - D. $x^2 - 4x - 2$

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. Correct

- D. No rationale available

ItemID A2KC.1087225
 Correct C
 Standard(s) MA.9-12.MA.912.A.4.2

8. $(x + 5)(x + 1) =$
- A. $2x + 6$
 - B. $x^2 + 6$
 - C. $x^2 + 6x + 6$
 - D. $x^2 + 6x + 5$

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2KC.1087226
 Correct D
 Standard(s) MA.9-12.MA.912.A.4.2

9. The Fredricks are building a rectangular pool in their yard. They measured the width to be $x - 5$ and the length to be $4x + 6$. What is the perimeter of their pool?
- A. $5x + 1$
 - B. $10x + 2$
 - C. $4x^2 - 30$
 - D. $4x^2 - 14x + 30$

Answer Choice Rationale

- A. This answer adds the length and the width, but does not multiply the result by 2.
- B. Correct answer.
- C. This answer multiplies the length and the width, but only multiplies like terms.
- D. This is the area of the pool instead of the perimeter.

ItemID A2K.1009607
 Correct B
 Standard(s) MA.9-12.MA.912.A.4.2

10. Gene planted 8 rows of magnolias. There are $5x - 2$ magnolias in each row. How many magnolias did Gene plant?
- A. $5x - 16$
 - B. $5x + 6$
 - C. $40x - 2$
 - D. $40x - 16$

Answer Choice Rationale

- A. Only multiplied the -2 by the 8
- B. Added the 8 to the -2
- C. Did not distribute the 8 times the -2
- D. Correct answer

<p>ItemID A2K.1014685 Correct D Standard(s) MA.9-12.MA.912.A.4.2</p>
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