GRE Algebra Practice Test 10

Question 1

What is the value of t if: $3x^2 + tx - 21 = (3x - 3)(x + 7)$?

Possible Answers:

18
21
-18
-3
24

Correct answer: 18

Explanation:

Use the foil method: $(3x - 3)(x + 7) = 3x^2 + 21x - 3x - 21 = 3x^2 + 18x - 21$ so t = 18.

Question 2

Expand the following equation:

$(x^3 - 3)(x + 7)$

Possible Answers:

- $x^2 + 14x - 21$
- $x^4 + 7x^3 - 3x - 21$
- $x^2 - 21$
- $x^4 - 4x - 21$
- $x^2 + 4x + 21$

Correct answer:

$x^4 + 7x^3 - 3x - 21$

Question 3

$(x+3y)(x-3y)=8$

Quantity A: x^2-9y^2

Quantity B: 16

Possible Answers:

Quantity B is greater.

The relationship cannot be determined from the information given.

The two quantities are equal.

Quantity A is greater.

Correct answer:

Quantity B is greater.

Question 4

$x < 0$

$y < 0$

Quantity A: $(x + y)^2$

Quantity B: $x^2 + 4xy + y^2$

Possible Answers:

Quantity A is greater.

Quantity B is greater.

The relationship cannot be determined.

The two quantities are equal.

Correct answer:

Quantity B is greater.

Question 5

Expand the function:

$(xy^3 + x^2y)(xy - x^3y^2)$

Possible Answers:

$-x^5y^3 - x^4y^5 - x^3y^2 + x^2y^4$

$x^5y^3 + x^4y^5 + x^3y^2 + x^2y^4$

$x^5y^3 - x^4y^5 + x^3y^2 + x^2y^4$

$-x^5y^3 - x^4y^5 - x^3y^2 - x^2y^4$

$-x^5y^3 - x^4y^5 + x^3y^2 + x^2y^4$

Correct answer:

$-x^5y^3 - x^4y^5 + x^3y^2 + x^2y^4$

Question 6

$x < 0$

$y > 0$

Quantity A: $(x + y)^3$

Quantity B: $x^3 + y^3$

Possible Answers:

Quantity B is greater.

Quantity A is greater.

The two quantities are equal.

The relationship cannot be determined.

Correct answer:

The relationship cannot be determined.

Question 7

$x < 0$

$y > |x|$

Quantity A: $(x + y)^3$

Quantity B: $x^3 + y^3$

Possible Answers:

The two quantities are equal.

Quantity B is greater.

Quantity A is greater.

The relationship cannot be determined.

Correct answer:

Quantity B is greater.

Question 8

Quantity A: $\frac{x^2 + 5x - 14}{x - 2}$

Quantity B: $x + 7$

Possible Answers:

The two quantities are equal.

Quantity A is greater.

Quantity B is greater.

The relationship cannot be determined.

Correct answer:

The relationship cannot be determined.

Question 9

Solve the following expression, $(x-2)^2$.

Possible Answers:

$x^2 - 4x + 4$

$x^2 - 2$

$x^2 + 4x + 4$

$x^2 + 4$

$x^2 - 4x - 4$

Correct answer:

$x^2 - 4x + 4$

Question 10

The speed of light is approximately $3.00 \cdot 10^8$ meters/sec.

In scientific notation how many kilometers per hour is the speed of light?

Possible Answers:

$1.08 \cdot 10^9$

$3.00 \cdot 10^6$

$1.08 \cdot 10^{12}$

$8.33 \cdot 10^4$

Correct answer:

$1.08 \cdot 10^9$