GRE Algebra Practice Paper 2

Question 1

Solve for x.

$$\frac{1}{4}^x=256$$

Possible Answers:

-4

256

 $\frac{1}{4}$

4

 $-\frac{1}{4}$

Question 2

Solve for x.

$$3^x=\frac{1}{9}$$

Possible Answers:

2

3

 $-\frac{1}{2}$

-2

 $\frac{1}{2}$

Question 3

Solve for x.

$$2^x = 32$$

Possible Answers:

- 5
- 4
- 6
- 8
- 7

Question 4

Compare 3^6 and 27^2 .

Possible Answers:

The relationship cannot be determined from the information given.

$$3^6 < 27^2$$

$$3^6 = 27^2$$

$$3^6 > 27^2$$

find x

$$8^{x}=2^{x+6}$$

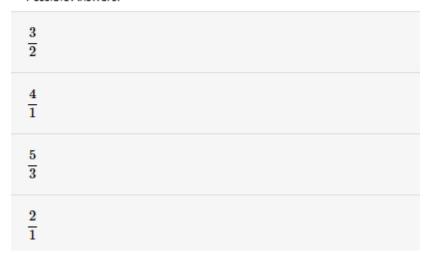
Possible Answers:



Question 6

If m and n are both rational numbers and $4^m=8^n$, what is $\frac{m}{n}$?

Possible Answers:



Quantity A: $4^5 * 4^{-3}$

Quantity B:
$$\frac{4^5}{4^{-3}}$$

Possible Answers:

The two quantities are equal.

The relationship cannot be determined from the information given.

Quantity B is greater.

Quantity A is greater.

Question 8

Simplify the following:

$$\frac{25^{44}-5^{86}}{12}$$

Possible Answers:

$$2 * 5^{23}$$

$$\frac{25^2}{24}$$

$$\frac{4}{5^2}$$

$$12 * 5^2$$

$$2*5^{86}$$

Simplify the following:

$$\frac{48^{50} + 80^{30}}{^{420}}$$

Possible Answers:



Question 10

If one mile is equal to 5,280 feet, how many feet are 100 miles equal to in scientific notation?

Possible Answers:

$$.528 \times 10^{6}$$
 5280×10^{2}
 $528,000$
 528×10^{3}
 5.28×10^{5}

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

Possible Answers:

$$x^2 + 4x + 4$$

$$x^2 - 4x - 4$$

$$x^{2} + 4$$

$$x^2 - 2$$

$$x^2 - 4x + 4$$

Question 12

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

Quantity B: x+7

Possible Answers:

Quantity A is greater.

The relationship cannot be determined.

Quantity B is greater.

The two quantities are equal.

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

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

Possible Answers:

Quantity A is greater.

The relationship cannot be determined.

The two quantities are equal.

Quantity B is greater.

Question 14

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

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

Possible Answers:

The two quantities are equal.

Quantity A is greater.

The relationship cannot be determined.

Quantity B is greater.

Expand the function:

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

Possible Answers:

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

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

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

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

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

Question 16

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

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

Possible Answers:

Quantity A is greater.

The two quantities are equal.

Quantity B is greater.

The relationship cannot be determined.

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

Quantity A: $x^2 - 9y^2$

Quantity B: 16

Possible Answers:

Quantity B is greater.

The two quantities are equal.

Quantity A is greater.

The relationship cannot be determined from the information given.

Question 18

Quantity A: 2^2+3^2

Quantity B: $(2+3)^2$

Possible Answers:

Quantity B is greater.

The two quantities are equal.

Quantity A is greater.

The relationship cannot be determined from the information given.

Expand the following equation:

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

Possible Answers:

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

$$x^4 - 4x - 21$$

$$x^2 + 14x - 21$$

$$x^2 + 4x + 21$$

$$x^2 - 21$$

Question 20

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

Possible Answers:

- -18
- 24
- 21
- -3
- 18