

GRE Algebra Practice Paper 5

Question 1

If $\frac{1}{4}x - \frac{1}{6}y = \frac{1}{6}$ and $\frac{y}{z} = \frac{1}{2}$, then what is the value of $3x - z$?

Possible Answers:

3

2

6

1

4

Question 2

If $3x + y = 13$ and $x - 2y = -12$, what is the value of x ?

Possible Answers:

$\frac{1}{3}$

1

2

3

$\frac{2}{3}$

Question 3

Audrey, Penelope and Clementine are all sisters. Penelope is 8 years older than Clementine and 2 years younger than Audrey. If the sum of Penelope and Clementine's age is Audrey's age, how old is Clementine's age?

Possible Answers:

4

2

3

8

Question 4

Jon invested part of \$16,000 at 3% and the rest at 5% for a total return of \$680.

Quantity A: The amount Jon invested at 5% interest

Quantity B: The amount Jon invested at 3% interest

Possible Answers:

The two quantities are equal

Quantity B is greater

The relationship cannot be determined from the information given

Quantity A is greater

Question 5

A hybrid car gets 40 miles per gallon. Gasoline costs \$3.52 per gallon. What is the cost of the gasoline needed for the car to travel 120 miles?

Possible Answers:

\$10.56

\$12.53

\$9.54

\$10.36

\$14.08

Question 6

Bill and Bob are working to build toys. Bill can build k toys in 6 hours. Bob can build k toys in 3 hours. How long would it take Bob and Bill to build $4k$ toys working together?

Possible Answers:

2 hours

4 hours

12 hours

8 hours

9 hours

Question 7

Solve for z :

$$3(z + 4)^3 - 7 = 17$$

Possible Answers:

2

8

4

-8

-2

Question 8

Two palm trees grow next to each other in Luke's backyard. One of the trees gets sick, so Luke cuts off the top 3 feet. The other tree, however, is healthy and grows 2 feet. How tall are the two trees if the healthy tree is now 4 feet taller than the sick tree, and together they are 28 feet tall?

Possible Answers:

8 and 20 feet

cannot be determined

14 and 14 feet

11 and 17 feet

12 and 16 feet

Question 9

A theme park charges \$10 for adults and \$5 for kids. How many kids tickets were sold if a total of 548 tickets were sold for a total of \$3750?

Possible Answers:

346

431

248

269

157

Question 10

$$x + y = 12 \text{ and } 2x - y = 6$$

Quantity A: x

Quantity B: y

Possible Answers:

Quantity B is greater.

Quantity A is greater.

The relationship cannot be determined from the information given.

The two quantities are equal.

Question 11

Quantitative Comparison

$$3x + 4y = 5$$

$$x - y = 6$$

Quantity A: x

Quantity B: y

Possible Answers:

The relationship cannot be determined from the information given.

Quantity B is greater.

Quantity A is greater.

The two quantities are equal.

Question 12

Sally is 2 years younger than Abby

Daisy is 5 years older than Tracy

Abby is 6 years older than Tracy

A

Sally's age

B

Daisy's age

Possible Answers:

Quantity A is greater

The two quantities are equal

The relationship cannot be determined

Quantity B is greater

Question 13

Abby works at a car dealership and receives a commission "c" which is a percent of the profit the dealership makes from the sale, which is the difference between the price "p" of the car and the value "v" of the car. How much, in dollars, does the dealership earn per transaction?

Possible Answers:

$$(p - v)(1 - c)$$

$$(p - v)(0.01c)$$

$$p(v - 0.01c)$$

$$pv(0.01c)$$

$$(p - v)(1 - 0.01c)$$

Question 14

A given university has an average professor pay of \$40,000 a year and an average administrator pay of \$45,000 per year. If the ratio of professors to administrators is 4 to 3, and the total pay for professors and administrators in a year is \$40,415,000, how many professors does the college have?

Possible Answers:

375

475

411

500

548

Question 15

$x > 0$

Quantity A: $-5x + 4$

Quantity B: $8 - 2x$

Possible Answers:

The relationship cannot be determined from the information given.

Quantity B is greater.

The two quantities are equal.

Quantity A is greater.

Question 16

Two cars start 25 mile apart and drive away from each other in opposite directions at speeds of 50 and 70 miles per hour. In approximately how many minutes will they be 400 miles apart?

Possible Answers:

187.5

None of the other answers

200

3.125

3.33

Question 17

Find the intersection of the following two equations:

$$3x + 4y = 6$$

$$15x - 4y = 3$$

Possible Answers:

(0.5, 1.125)

(3, 4)

(0.2, 0)

(18, 0)

(1, 0.5)

Question 18

$$y = x^2 - 10$$

$$y = 15$$

Quantity A: $y/3$

Quantity B: x

Possible Answers:

The relationship cannot be determined from the information given.

Quantity A is greater.

Quantity B is greater.

The two quantities are equal.

Question 19

One of the roots of the equation $x^2 + kx - 12 = 0$ is 3, and k is a constant.

Quantity A: The value of k

Quantity B: -1

Possible Answers:

Quantity B is greater.

The two quantities are equal.

The relationship cannot be determined from the information given.

Quantity A is greater.

Question 20

$$x^2 + 5x - 24 = 0$$

$$y^2 - 9y + 20 = 0$$

Quantity A

x

Quantity B

y

Possible Answers:

Quantity B is greater.

The relationship cannot be determined from the information given.

The two quantities are equal.

Quantity A is greater.