GRE Quant Foundation Assessment Test (Arithmetic)
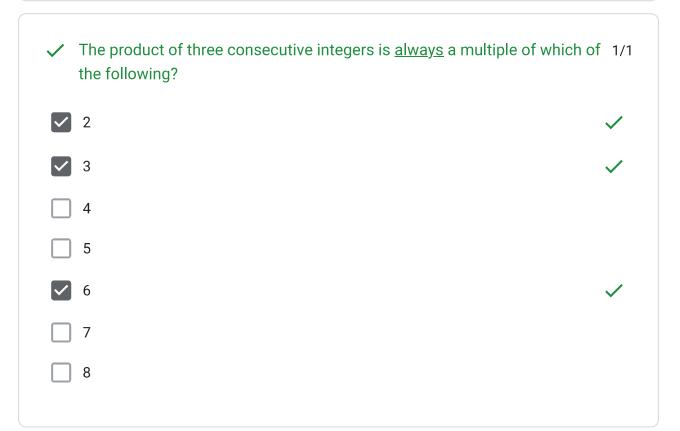
Total points   36/50

This is an assessment designed to assess your GRE Quant Foundation knowledge. None of the questions are tricky. None of the questions are puzzles. They solely test knowledge.

Calculators: You can use a calculator but it has to be one of those crappy ones like the one on your phone when you turn it vertically. Or the one on the ETS website in the PowerPrep exams. Or https://www.gregmat.com/tools/calculator

Note: we ask for your email as you'll be sent a copy of your responses after the quiz so that you can review it later.

Email *

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✓ Zero is not an integer.   1/1

○ True

⦿ False   ✓

✓ Zero is an even number.   1/1

⦿ True   ✓

○ False

✓ If x is an integer and x = 6!, what does x equal?   1/1

720 ✓

✓ The product of three consecutive integers is <u>always</u> a multiple of which of   1/1
the following?

- [x] 2 ✓
- [x] 3 ✓
- [ ] 4
- [ ] 5
- [x] 6 ✓
- [ ] 7
- [ ] 8

✗ 8 ÷ 2(1+1) =   0/1

2 ✗

Correct answer

8

✕ **How many integers are there from 20 to 100, exclusive?** 0/1

81 ✕

Correct answer

79

✓ **What is the least non-negative multiple of 12?** 1/1

◉ 0 ✓

○ 12

○ 24

✓ **What does 2 raised to the power of 2 raised to the power of 2 equal?** 1/1

16 ✓

✓ **What is the result of a negative number minus a negative number?** 1/1

○ a negative number

○ a positive number

◉ it depends ✓

✓ True or False?   1/1

$$\sqrt{25} = \pm 5$$

○ True

◉ False   ✓

✓ What is the sum of all integers from 141 to 160, inclusive?   1/1

3010   ✓

✓ What is the sum of all multiples of 3 from 1 to 300, inclusive?   1/1

15150   ✓

✕ The number 123,456,789,123,456,798 is divisible by which of the   0/1
   following?

   NOTE: That number is too large to input into your GRE calculator.

- [x] 2   ✓
- [x] 3   ✓
- [ ] 4
- [x] 6   ✓
- [ ] 8
- [ ] 9

Correct answer

- [x] 2
- [x] 3
- [x] 6
- [x] 9

✓ How many prime numbers are there between 0 and 20?   1/1

- ( ) 5
- ( ) 6
- ( ) 7
- (•) 8   ✓

✓ How many distinct prime factors does the number 337,500 have?   1/1

3   ✓

✓ How many positive factors does the number 337,500 have?   1/1

72   ✓

✗ How many even positive factors does the number 337,500 have?   0/1

24   ✗

Correct answer

48

✓ What is the greatest common factor of 337,500 and 2,100?   1/1

300   ✓

✓ The number zero is a multiple of every integer.   1/1

◉ True   ✓

○ False

✓ What is the unit digit of   1/1

$$7^{37}$$

○ 1

○ 3

◉ 7   ✓

○ 9

✗ What is the unit digit of   0/1

$$2^{30} + 3^{30}$$

5   ✗

Correct answer

3

✓   **What is the greatest possible value of x if the below results in an integer?**   1/1

$$\frac{500!}{7^x}$$

○ 76

○ 78

○ 80

● 82   ✓

○ 84

✓   **How many trailing zeros does 500! have when 500! is written as an integer?** 1/1

124   ✓

✓   **In a fraction, when the numerator is less than the denominator and both are** 1/1
positive, what is the remainder?

● the numerator   ✓

○ the denominator

○ it cannot be determined

✓ *Write your answer as a fraction in simplest form.*   1/1

$$\frac{3}{4} \times \frac{2}{7} \div \frac{5}{3} =?$$

9/70 _____   ✓

✓ *Write your answer as a fraction in simplest form.*   1/1

$$\frac{3}{4} - \frac{2}{9} =?$$

19/36 _____   ✓

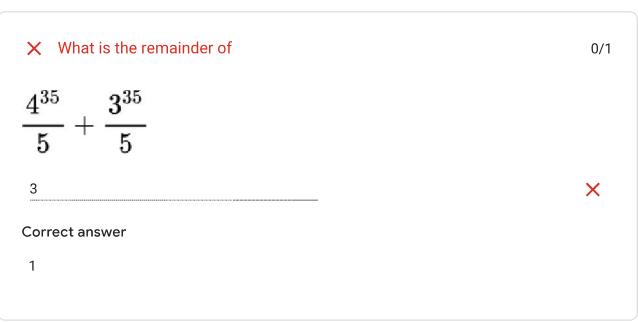✓ The fraction (x/250) terminates for all integer values of x.   1/1

◉ True   ✓

◯ False

✗ If x = 3.444444... (with 4 repeating endlessly), what is x written as an improper fraction?   0/1

Write your answer with the numerator and denominator as small as possible, where they are both positive.

_____   ✗

Correct answers

31/9

(31/9)

✗ What is 2.44499999 rounded to the nearest hundredth?   0/1

2.4 _____   ✗

Correct answer

2.44

✓ What is the remainder of -21/4?   1/1

3 _____   ✓

✓ What is the remainder of 3^{30} divided by 5?   1/1

○ 1

○ 2

○ 3

⦿ 4   ✓

○ 5

✗ What is the remainder of   0/1

$$\frac{4^{35}}{5} + \frac{3^{35}}{5}$$

3   ✗

Correct answer

1

✗ **Which of the following accurately defines an irrational number?**   0/1

☐ Any real number that cannot be written as a fraction.

☑ Any real number whose decimal expansion is infinite but repeats.   ✗

☐ Any real number that cannot be plotted on the real number line.

☑ Any real number whose decimal expansion is infinite but never repeats.   ✓

Correct answer

☑ Any real number that cannot be written as a fraction.

☑ Any real number whose decimal expansion is infinite but never repeats.

✓ **What is the quotient of 25 ÷ 7?**   1/1

3 _____   ✓

✓ **The decimal system uses 10 characters to express numbers and the binary** 1/1
system uses 2 characters to express numbers.

◉ True   ✓

○ False

✓ If the 8th root of x^6 were expressed purely in exponent form (so no roots),   1/1
then x would be raised to what exponent value?

Write your answer as a fraction in simplest form.

3/4   ✓

✓ If |x-3|=5, then the product of the two possible x values is what number?   1/1

-16   ✓

✗ If |x+a|=b, then which of the following is always true, where a, b ≠ 0?   0/1

◉ The two solutions of x are a distance of a from b on the number line.   ✗

○ The two solutions of x are a distance of b from a on the number line.

○ The two solutions of x are a distance of b from -a on the number line.

○ The two solutions of x are a distance of -b from a on the number line.

○ The two solutions of x are a distance of -b from -a on the number line.

Correct answer

◉ The two solutions of x are a distance of b from -a on the number line.

✗ **If we are trying to rationalize the denominator of a/(b-c), where b is an integer and c is an irrational square root, what should we multiply both the numerator and denominator by?** 0/1

10000000 ✗

Correct answers

b+c

(b+c)

b + c

✓ **In a fruit basket containing only apples and oranges, the ratio of apples to oranges is 3:8. If the basket contains more than 40 pieces of fruit, what is the minimum possible number of apples?** 1/1

12 ✓

✓ **What is 700% more than 2 equal to?** 1/1

16 ✓

✓ **Yesterday, the ratio of dogs to cats was 4:7. Today, the ratio of dogs to cats is 5:6. The ratio today is what percent larger than the ratio yesterday?** 1/1

Round your answer to the nearest whole percentage.

46 ✓

✗ **Which of the following is true of 0?**   0/1

- [ ] $0! = 0$
- [x] $0! = 1$ ✓
- [ ] 0° is undefined.
- [ ] $0^o = 0$
- [x] $0^o = 1$ ✗

Correct answer

- [x] $0! = 1$
- [x] 0° is undefined.

✓ **Which of the following numbers is/are prime?**   1/1

- [x] 101   ✓
- [x] 103   ✓
- [x] 107   ✓
- [x] 109   ✓

✓ If a, b, and c are distinct primes, what is least common multiple of the numbers a^4b^3 and a^2c^4?   1/1

○ a^2

○ $a^2b^3c^4$

◉ $a^4b^3c^4$ ✓

○ $a^6b^3c^4$

✓ Every integer greater than 1 has a unique prime factorization.   1/1

◉ True   ✓

○ False

✗ What is the greatest possible value of x if the below results in an integer, if   0/1
x is an integer?

$$\frac{50!}{4^x}$$

24   ✗

Correct answer

23

Feedback

If you chose 15, remember that 4 is not a prime. The method you're trying to apply works only for primes, so decompose 4^x into primes and try again.

✓   1/1

$$2^{2^{2^{2}}} = 2^8$$

◯ True

◉ False   ✓

✗ **x is an integer larger than 100. Which of the follow __must be__ true about x+1?** 0/1

☐ x+1 has more factors than x.

☑ x and x+1 share no prime factors.   ✓

☑ x and x+1 share no factors.   ✗

Correct answer

☑ x and x+1 share no prime factors.

✓ **Real numbers encompass which of the following?**   1/1

☑ integers   ✓

☑ rational numbers   ✓

☑ irrational numbers   ✓

☑ transcendental numbers like π   ✓

☑ algebraic numbers like the square root of 2   ✓

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