

Algebra 1 · Interpreting Expressions and Real Numbers · Quiz

Common Core A-SSE.A.1a, A-SSE.A.1b, N-RN.B.3 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

Try these ten multiple-choice questions on coefficients, terms, growth and decay factors, and rational and irrational numbers. Choose one answer for each question, then read the explanation to learn from any mistake.

Algebra 1 Common Core: A-SSE.A.1a · A-SSE.A.1b · N-RN.B.3

Questions

Question 1

What is the coefficient of y in $3y^2 - 7y + 2$?

- A. 7
- B. 3
- C. -7
- D. 2

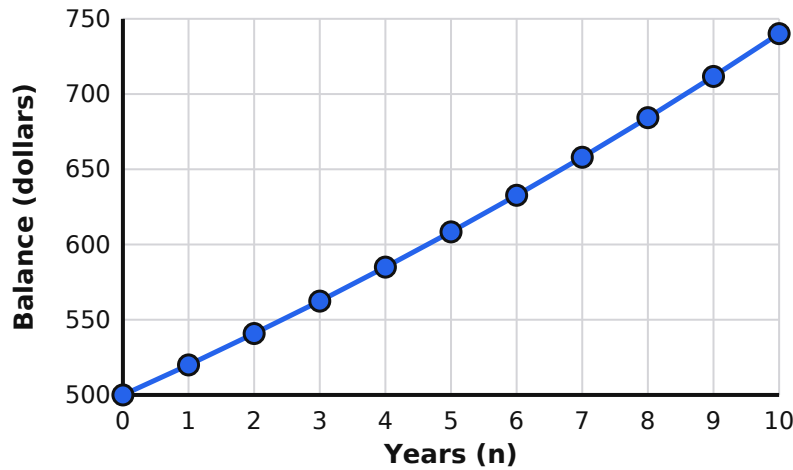
Question 2

How many terms does $2x(x+3) - 5$ have?

- A. 1
- B. 2
- C. 3
- D. 4

Question 3

The graph shows $500(1.04)^n$. What does 1.04 represent?



Balance over 10 years.

- A. The yearly growth factor, a 4% increase
- B. A yearly decrease of 4%
- C. The starting balance
- D. The number of years

Question 4

Evaluate $200(1.1)^2$.

- A. 220
- B. 242
- C. 240
- D. 440

Question 5

Which growth factor models a loss of 8% each year?

- A. 1.08
- B. 0.08
- C. 0.92
- D. 0.8

Question 6

Which number is irrational?

- A. $\sqrt{49}$
- B. $0.\overline{7}$
- C. $\sqrt{\frac{4}{9}}$
- D. $3+\pi$

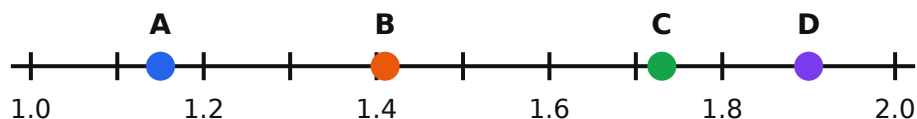
Question 7

Which describes $\frac{2}{3}+\sqrt{5}$?

- A. Rational
- B. Irrational
- C. Zero
- D. A whole number

Question 8

Which point best represents $\sqrt{2}$?



Four points on a number line.

- A. B
- B. A
- C. C
- D. D

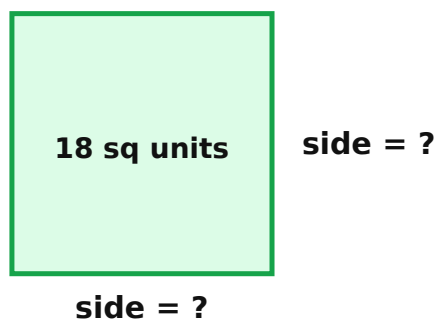
Question 9

Which product is rational?

- A. 2π
- B. $4 + \sqrt{7}$
- C. $\sqrt{3} \cdot \sqrt{2}$
- D. $\sqrt{5} \cdot \sqrt{5}$

Question 10

A square has area 18 units^2 . What is its perimeter?



A square with area 18.

- A. $6\sqrt{2}$ units
- B. 18 units
- C. $12\sqrt{2}$ units

D. $9\sqrt{2}$ units

Answer key

1. **C** – The term is $-7y$, so the coefficient keeps its negative sign. 3 is the coefficient of y squared, and 2 is the constant.
2. **B** – The only addition or subtraction at the top level separates $2x(x+3)$ from 5. The product $2x(x+3)$ is one term, not several.
3. **A** – Each year the balance is multiplied by 1.04, which is 104% of the previous balance. The starting balance is 500.
4. **B** – 1.1 squared is 1.21, and $200 \times 1.21 = 242$. Multiplying 200 by 1.1 only once, or by 2.2, are common slips.
5. **C** – A loss of 8% leaves 92% of the amount, so the factor is $1 - 0.08 = 0.92$.
6. **D** – A rational number plus π is irrational. The other three equal 7, $7/9$ and $2/3$.
7. **B** – A rational number plus an irrational number is always irrational.
8. **A** – The square root of 2 is about 1.414, which matches point B.
9. **D** – The square root of 5 times itself is 5. The others equal 2π , an irrational sum, and the square root of 6.
10. **C** – The side is the square root of 18, which is 3 times the square root of 2, and 4 sides give 12 times the square root of 2 (about 16.97). $6\sqrt{2}$ is only half of that.

Remember:

- Standards A-SSE.A.1a, A-SSE.A.1b and N-RN.B.3: interpret parts of expressions and reason about sums and products of rational and irrational numbers.
- Terms are added; factors are multiplied; a coefficient is the number factor of a term.
- In $P(1+r)^n$, the factor $1+r$ multiplies the amount once per period.
- Rational plus irrational is irrational, and nonzero rational times irrational is irrational.
- Two irrational numbers can have a rational sum or product.