Math League Adaptive Learning System

My Home   **Take 2021-2022 Contests Online**   **Repository of Questions**   **Study Math**   **Class Management**   **My Account**

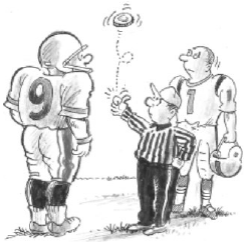**2019-20 Annual Algebra Course 1 Contest**

Return to Contest Information

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

1. (Question: 12069) If $T = 1$, $O = 2$, and $T + O + S + S = 7$, then $S =$

A) 2

B) 3

C) 3.5

D) 4

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

2. (Question: 12070) If x is an integer, then the least possible value of $4x^2$ is

A) -4

B) 0

C) 4

D) 16

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

3. (Question: 12071) $(c^{20})(c^2)(c^0) =$

A) 0

B) c^0

C) c^{22}

D) c^{40}

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

4. (Question: 12072) I had g invited guests at my party. Each invited guest brought 2 uninvited friends. Each person who came, whether invited or not, brought two gifts. How many gifts were brought?

A) $(g + 2) \times 2$

B) $(g \times 2) + 2$

C) $(g + 2g) \times 2$

D) $(g + 2g) \times 2g$

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

5. (Question: 12073) $4y(x - y) - (3x + 2y)(x - y) =$

A) $(6y + 3x)(x - y)$

B) $(6y - 3x)(x - y)$

C) $(2y + 3x)(x - y)$

D) $(2y - 3x)(x - y)$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

6. (Question: 12074) $4x^2 + 3x + 2x^3 - 2x^2 - 3x - 4x^3 =$

A) 0

B) $2x^2 - 2x^3$

C) $2x^2 + 6x - 2x^3$

D) $2x^2 + 6x + 6x^3$

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

7. (Question: 12075) If $\dfrac{3}{5}$ of $2y$ is equal to $\dfrac{4}{7}$ of x, then what is y in terms of x?

A) $\dfrac{10}{21}x$

B) $\dfrac{20}{21}x$

C) $\dfrac{21}{20}x$

D) $\dfrac{21}{10}x$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 1   School Year: 2019-2020

8. (Question: 12076) How many distinct solutions does $(x + 2)(x - 2)(x^2 - 4) = 0$ have?

A) 1

B) 2

C) 3

D) 4

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

9. (Question: 12077) If $x > 5$ and x is prime, the least common multiple of $20x^2$ and $30x^3$ is

A) $10x$

B) $60x^3$

C) $60x^5$

D) $600x^5$

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

10. (Question: 12078) For every 30 sec. Peg and her dog Al are in the water, Peg later walks Al for 2 min. If they spent a total of h hrs. combined in the water and walking, they spent _?_ min. in the water.

A) $12h$

B) $24h$

C) $36h$

D) $48h$

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

11. (Question: 12079) If $x - y = 1$ and $x^2 - y^2 = 39$, then $xy =$

A) 39

B) 78

C) 380

D) 1521

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

12. (Question: 12080) What is the remainder when $x^3 - x^2 + x - 1$ is divided by $x - 1$?

A) 0

B) 1

C) x

D) $2x$

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

13. (Question: 12081) What is the equation of a line perpendicular to $y = \dfrac{1}{3}x + 4$ and with the same x-intercept?

A) $y = -3x + 4$

B) $y = 3x - 36$

C) $y = \dfrac{1}{3}x + 4$

D) $y = -3x - 36$

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

14. (Question: 12082) What is the sum of both solutions to $4x^2 - 4x - 35 = 0$?

A) -1

B) 0

C) 1

D) 4

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

15. (Question: 12083) Someone replaced Emma's g eggs with b billiard balls! Emma notices that $b + 1 = g^2$ and $b^2 + 31 = g^4$. What is the value of g?

A) 4

B) 11

C) 12

D) 30

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 2   School Year: 2019-2020

16. (Question: 12084) Emma flies k km at r m/min. to retrieve her missing eggs. She flies for _?_ hours.

A) $\dfrac{1000}{rk}$

B) $\dfrac{60k}{1000r}$

C) $\dfrac{1000k}{60r}$

D) $\dfrac{1000}{60rk}$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

17. (Question: 12085) $4^{2x} + 4^{2x} + 4^{2x} + 4^{2x} =$

A) 2^{4x}

B) 2^{4x+2}

C) 4^{8x}

D) 16^{2x}

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

18. (Question: 12086) If $f(x) = 8x^2 - 2$, then which of the following is equal to $f(4)$?

A) $f(126)$

B) $f(8)$

C) $f(-2)$

D) $f(-4)$

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

19. (Question: 12087) How many integer values of x satisfy $|3x - 7| < 5$?

A) 1

B) 2

C) 3

D) 6

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

20. (Question: 12088) If $x^2 + x + 1 = 18$, then the average of x^3, x^2, and x is

A) $6x$

B) $9x$

C) $18x$

D) $36x$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

21. (Question: 12089) The Cones is an elite *a cappella* vocal group. To be accepted, a Cone has to be good at setting up chairs in the theater and have a great voice. Together, four Cones working at the same rate can set up every chair in the theater in 56 min. At this same rate, it would take _?_ min. for 7 Cones to set up every chair.

A) 24

B) 32

C) 48

D) 98

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

22. (Question: 12090) If 10^a is 0.01 percent of 10^b, then $a =$

A) $b - 4$

B) $b - 2$

C) $b + 2$

D) $b + 4$

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 3   School Year: 2019-2020

23. (Question: 12091) Ishmael hooked a big fish! The fish dragged his boat x km east, then $6x + 3$ km north, then $x + 8$ km east, then $2x - 2$ km south, then $2x + 8$ km west, then x^2 km south, $x > 0$. Then, the fish escaped. Ishmael looked around to find that he was exactly where he had started. How many km long was the route taken by the fish and Ishmael?

A) 5

B) 30

C) 81

D) 102

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

24. (Question: 12092) Last week I mixed up 400 ml of lemonade that was 30% sugar and 200 ml of lemonade that was 40% sugar, and then poured all of it into a glass. During the week 100 ml of pure water evaporated from the lemonade. What percent sugar is the remaining lemonade?

A) 30%

B) 33%

C) 35%

D) 40%

Answer >>   View similar question(s)

Answer: A

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

25. (Question: 12093) If $x \neq 0$, $y \neq 0$, and $\sqrt{xy} \times \sqrt{15} = \sqrt{3x^2} \times \sqrt{y}$, then $x =$

A) 5

B) y

C) $5y$

D) $5 + y$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

26. (Question: 12094) If $x \neq 6$ and $x \neq -3$, then $\dfrac{x^2 - 3x - 18 - x + 6}{(x-6)(x+3)} =$

A) 1

B) $\dfrac{x+2}{x+3}$

C) $\dfrac{x-6}{x+3}$

D) $\dfrac{-2}{-(x-6)}$

Answer >>   View similar question(s)

Answer: B

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

27. (Question: 12095) If $3x - 4y + 5z = 13$ and $4x - 5y + 6z = 18$, then $x - 2y + 3z =$

A) 1

B) 3

C) 15

D) 28

Answer >>   View similar question(s)

Answer: C

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

28. (Question: 12096) Sir Saul was the sole survivor of the siege. There were between 1000 and 5000 knights at the start, but each day, two-thirds of the remaining knights fell or fled. Yesterday Saul lost his final 2 fellow knights. How many days ago did the siege start?

A) 70

B) 14

C) 7

D) 6

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

29. (Question: 12097) If $8^{2a} = 32b$, then $b =$

A) 2^a

B) $2^{6a/5}$

C) 2^{2a-3}

D) 2^{6a-5}

Answer >>   View similar question(s)

Answer: D

Grade: Algebra Course 1   Level of Difficulty: 4   School Year: 2019-2020

30. (Question: 12098) If p is the product of all integers from 1 through 1000, what is the greatest integer q such that 4^q is a factor of p?

A) 250

B) 312

C) 330

D) 497

Answer >>   View similar question(s)