

Round 1, Question 1

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Evaluate: $4 + 7$

Round 1, Question 2

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Your teacher assigned you 42 homework problems. You have completed X of them. How many problems do you still have to do?

Round 1, Question 3

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Evaluate: $4X$

Round 1, Question 4

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

How long, in hours, would it take you to travel X miles at a constant speed of 16 miles per hour?

Round 2, Question 1

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Solve for a : $2a + 7 = 3$

Round 2, Question 2

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Kevin's magic box takes a number, multiplies it by 5, subtracts 3, and divides by 2. If Kevin puts a number b into the box and the number X comes out, what is the value of b ?

Round 2, Question 3

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Solve for c : $\frac{c}{3} + 4 = 15X - 8$

Round 2, Question 4

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

If $\frac{X}{d} + \frac{d}{5} = 0$, what is the value of d ?

Round 3, Question 1

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

What is the area, in square units, of a rectangle with side lengths 5 units and 7 units?

Round 3, Question 2

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

If a square has an area of $X + 14$ square units, what is its perimeter?

Round 3, Question 3

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Elizabeth has a rectangular piece of cardboard measuring 35 cm by X cm. Since brown is not a very interesting color, Elizabeth wants to cover the entire front side of the cardboard with pink rectangular sticky notes measuring 4 cm by 5 cm. What is the minimum number of sticky notes she has to use?

Round 3, Question 4

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Triangle ABC and triangle DEF are similar. Triangle ABC has an area of 2 square units, while triangle DEF has an area of $2X$ square units. If triangle ABC has a perimeter of 7 units, what is the perimeter of triangle DEF ?

Round 4, Question 1

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

If you flip a fair coin 128 times, what is the expected number of times it comes up heads?

Round 4, Question 2

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

The probability of rolling a 6 two consecutive times on a heavily loaded die is X percent. What is the percent chance of rolling a 6 just once on this die?

Round 4, Question 3

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

There are X mechanical pencils in John's drawer. 8 of them do not have lead. If John picks a pencil at random, what is the percent chance that it will not have lead?

Round 4, Question 4

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

A fair die with X sides is labeled with the numbers 1 through X . What is the probability of rolling three prime numbers in a row with this die? (The prime numbers are not necessarily different.)

Round 5, Question 1

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

A store has 421 boxes of chocolate truffles in stock. If each box contains 17 truffles, how many truffles does the store have?

Round 5, Question 2

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

Amy initially has X jelly beans. Over the course of the day, she gives away 4132 jelly beans. She is then able to arrange her remaining jelly beans into a square measuring j by j jelly beans. What is the value of j ?

Round 5, Question 3

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

What is the volume of a waffle cone with a base radius of $\frac{3}{\sqrt{\pi}}$ units and a height of X units?

Round 5, Question 4

General Instructions: In all questions after Question 1 of each round, the capital letter X represents the answer to the previous question. Once you solve your question, write only a numerical answer on the answer sheet; do not include units.

The word "DINNER" is repeated infinitely like so: "DINNERDINNERDINNERDINNER..." The X th letter in the series is the n th letter in the alphabet. What is the value of n ?