

## Ciphering - 6th grade

### General Rules

- In the ciphering round, students will be given 90 seconds to answer each question. If the student solves the question within the first 30 seconds, their school receives 5 points; if they solve the question within 60 seconds, they receive 3 points; if they solve the question within 90 seconds, they receive 1 point. Runners will collect your papers during the 5 second warning. There is no penalty for a wrong answers. All fractions must be reported in their simplest forms or as a decimal, and  $e$ ,  $i$ , or  $\pi$  must be left in the answer. You must write your answers in the box provided, or they will not be scored. Please remember to write your name and school name on your answer sheet before each round. I will give a 5 second warning before the end of each 30 second interval. Please raise your right hand up high with your answer sheet folded in half if you have the answer when I give the warning. It is NOT necessary to include units but if wrong units are provided, then the answer is wrong. No calculators or other aides are allowed. Any questions? This is a sample problem. And...begin.

Round # - Problem #	Answer
Sample What is the value of $\sqrt{16}$ ?	4
1-1 What is the greatest common factor of 182 and 70?	14
1-2 Compute the value of $(1 + 2)^2 * 8/4 + 5 - 6$ .	17
1-3 If $a^2 + 2ab + b^2$ , what is the value of $3\Omega 2$ ?	25
1-4 If 3 cookies can be traded for 5 apples and 6 apples can be traded for 8 ice cream cones, how many cookies can be traded for 40 ice cream cones?	18
1-5 Joe went to school at 8:00 A.M. He has 4 classes, each lasting 60 minutes and a lunch break of 30 minutes. What time did he leave school?	12:30 P.M.
2-1	

How many ways are there to give <b>zero</b> pieces of candy to 29 children? No, you can't have negative candy.	1
2-2 Find the fraction equivalent of the decimal $0.\overline{09}$	$\frac{1}{11}$
2-3 How many different ways can 3 people finish first, second, and third in a 9-person race?	504
2-4 Simplify the fraction $\frac{133}{361}$ .	$\frac{19}{23}$
2-5 If the area of my pizza is $144\pi$ , what is its circumference?	$24\pi$
3-1 What is the largest prime number less than 100?	97
3-2 How many edges does a tetrahedron have?	6
3-3 Compute the area, in inches squared of an isosceles triangle with two sides measuring 10 inches and the base measuring 12 inches.	$48in^2$
3-4 Solve for $x$ . $3(2(2x)) - 7 = 17$	2
3-5 If a farmer takes 3 hours to catch a chicken and 2 days to catch a horse, how long would it take, <u>in hours</u> , to catch 17 chickens and 6 horses?	339 hours
4-1 If light travels at exactly 299,792,458 m/s, one parsec is 30 light years, the distance to the moon can fit all the planets inside with a couple thousand meters to spare, and the speed of sound is 768 m/h, how far, in miles, did Tim travel on his	20 miles

bike ride in which he rode at 10 mph for 2 hours?	
4-2  Simplify. $\frac{\sqrt{9}+\sqrt{16}}{\sqrt{85}-36}$	1
4-3  What is the smallest integer larger than 1 that has a square root and fifth root?	1024
4-4  Dan sweats 1 cup of water every minute in the sun. How many minutes did he spend in sun if he sweat a gallon of fluid?	16
4-5  Find the sum of $7.\overline{3} + 7.125 + 7.\overline{16} + 7.375$ . Express your answer as a mixed number.	29
Ext 1  Yu came home from math team practice with 5 tests. The scores were 64.3, 90.2, 32.1, $-8.8$ , and 52.2, and he was devastated. What was the mean of his scores?	46
Ext 2  With a falchion, Harold can deal an additional 150% damage to his already massive 18,000 damage with a critical hit. How much damage does Harold do, <b>total</b> , in 4 critical hits?	180000
Ext 3  What is the sum of the number of days in July, the number of one-digit prime numbers, and the square root of 225?	50

#### Notes

- Certain references entered the questions due to lack of flavor text
  - Ex: Ext 2 >> AoWD
  - Ex: 3-5 >> AoWD
- Other questions are trolls
  - Ex: 4-1 >> don't read it
  - Ex: 2-1 >> read carefully