**Directions: Work out each problem and find the best answer. For all problems, NOTA means “none of these answers”.**

For questions 1 and 2, use the sign below.

**Chiles Petting Zoo Admission Prices**

**(includes taxes)**

**Under 4 years FREE**

**4-12 years $2.75**

**Over 12 years $5.50**

1. Welcome to the Chiles Petting Zoo! What would be the total admission cost for your mom (age 33), dad (age 34), 5-year-old sister, and you (pretend you are 10 years old)?

**A) $11.00 B) $13.75 C) $16.50 D) $19.25 E) NOTA**

1. Sophie, the cashier, informs you that it’s your lucky day! Today there is a 20% discount off your total ticket purchase. What is the total admission cost for you (remember, you are 10 years old!) and your two cousins who are 12 and 14 years old?

**A) $2.20 B) $8.80 C) $22.00 D) $88.00 E) NOTA**

1. Simplify: (1 + 14) ÷ 3 × 4.

**A)  B) 20 C) 24 D)  E) NOTA**

1. Your little sister is fascinated by the newborn lamb, Nicki. While she is petting Nicki, you notice that the rectangular pen Nicki is in is 15 feet long and 12 feet wide. Find the **area** of the pen in square feet.

**A) 54 B) 170 C) 180 D) 200 E) NOTA**

1. Find the **perimeter** of the pen (from Question #4) in feet.

**A) 27 B) 34 C) 42 D) 54 E) NOTA**

1. Nicki’s mother is in the center of the pen. Because Nicki is young, she wants to stay within a 3-foot radius of the center of her mother. If the area she can roam is represented by the equation A =r2 (A = area, r = radius), find the area in square feet. Assume she can walk on top of her mother.

**A) 5 B) 6 C) 9 D) 16 E) NOTA**

1. Which of the following is a prime number?

**A) 49 B) 51 C) 91 D) 97 E) NOTA**

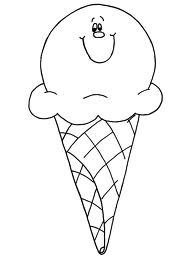
1. Now your family wants to go pet the snake. Benny, a Burmese python, is known for his incredibly long body. He is 13feet long! Find his length in yards.

**A)  B)  C) 27 D)  E) NOTA**

1. OH NO! Benny has escaped! If Benny slithers at an average rate of 2 miles per hour and the exit to the petting zoo is of a mile away from where he originally escaped, how many **minutes** do you have to catch him before he leaves the petting zoo? Assume there is only one exit and that Benny is in constant motion towards the exit.

**A) 10 B) 15 C) 20 D) 30 E) NOTA**

1. After catching Benny (with the keeper’s help of course), you and your family receive coupons for free ice cream! Your ice cream cone has a radius of 2 inches and a height of 5 inches. Find the volume of the cone in cubic inches using the formula V = r2h.



**A)  B)  C) 20 D)  E) NOTA**

1. It is so hot outside that your ice cream is starting to melt. Ever the curious child, you decide to convert the current temperature from Fahrenheit (°F) to Celsius (°C). Your mother’s phone shows that the current temperature is 95°F. Find the current temperature in °C, using the formula °C = (°F – 32).

**A)  B) 30 C) 63 D)  E) NOTA**

1. Which of the following numbers is divisible by 3 **and** 8?

**A) 2952 B) 3060 C) 4624 D) 5432 E) NOTA**

1. Your mom is running late to the miniature horse feeding. By the time she gets there, there is only one more horse available to feed. The worker says, “Whoever can figure out the number I am thinking of can go feed the last horse.” He gives the following clues:

I. It is a four digit number whose first digit is not zero.

II. The first digit is neither prime nor composite.

III. The second and third digits are the same.

IV. Both addition and multiplication of the second and third digits will result in the fourth digit.

Which of these numbers should your mom guess in order to feed the last horse?

**A) 1224** **B) 1339 C) 2224 D) 2339 E) NOTA**

1. You, your dad, and your sister are feeding a miniature horse named Shiming. The worker gives you a bag with 12 food items inside. If  of the items are apples and of the items are carrots, then how many sugar cubes are in the bag assuming there are only apples, carrots, and sugar cubes?

**A) 1 B) 2 C) 4 D) 6 E) NOTA**

1. Given 8x+28=52, find 2x+7.

**A) 7 B) 9 C) 11 D) 13 E) NOTA**

1. Shiming throws a temper tantrum because he wants peaches instead of apples. The only way to calm him down is to recite the letters of his name in order over and over again, starting with S. If you recite one letter per second, what letter will you be reciting on the 30th second?

*SHIMINGSHIMING…*

**A) H B) I C) M D) S E) NOTA**

1. Now it is time for lunch! Right outside the petting zoo is Jimmy’s Food Stand. The menu items are listed below:

|  |  |  |
| --- | --- | --- |
| **Drink** | **Side** | **Entrée** |
| Water - $1.00 | Cookie - $1.10 | Hot Dog - $2.25 |
| Juice - $1.25 | French Fries - $1.50 | Hamburger - $2.75 |
| Soda - $1.50 |  | Cheeseburger - $2.85 |

You only have $4.75 with you and you want to buy a complete meal (one drink, one side, and one entrée). Which of the following could be a meal you buy?

**A) Soda, French Fries, Cheeseburger B) Soda, Cookie, Hamburger**

**C) Juice, Cookie, Hot Dog D) Water, Cookie, Cheeseburger**

**E) NOTA**

1. If you had enough money to buy **any meal** you wanted, how many ways could you choose a complete meal (one drink, one side, and one entrée), using the table from Question #17?

**A) 8 B) 10 C) 15 D) 18 E) NOTA**

1. After eating lunch, you decide to go back into the petting zoo, but Sophie (the cashier) stops you and tells you that in order to re-enter, you must put the following numbers in order from **least to greatest**:

 -2 1.3  -0.5

**A) -0.5, -2, , , 1.3 B) , 1.3, , -0.5, -2**

**C) -2, -0.5, , 1.3,  D) -0.5, -2, , 1.3,  E) NOTA**

1. The pig race is about to begin! The four competing pigs are Weiming, Keven, Kenneth, and Danny. There are four lanes on the racetrack- lanes 1, 2, 3, and 4. If Weiming is not in lane 1 or lane 2, Keven is in an odd-numbered lane, Kenneth is in an even-numbered lane, and Danny is in lane 1, then who is in lane 4?

**A) Danny B) Kenneth C) Keven D) Weiming E) NOTA**

1. After an exciting race, Weiming comes in first place! He begins to run his victory lap around the circular racetrack. If the radius of the racetrack is 8 feet, find the circumference of the racetrack in feet (circumference = diameter x ).

**A) 4 B) 8 C) 12 D) 16 E) NOTA**

1. You and your sister decide to go comfort the three losing pigs that have gone to their pens. Keven sniffles every 45 seconds, Danny every 2 minutes, and Kenneth every 30 seconds. How many **seconds** pass between consecutive sniffles in unison (when they all sniffle at the same time) assuming they sniffle in unison at least once?



**A) 90 B) 180 C) 360 D) 480 E) NOTA**

1. Joyce and Cici are also coming to the petting zoo. If Joyce arrives at 2 PM and walks at an average rate of 50 feet/minute towards the pig pens while Cici arrives at 2:05 PM and walks at an average rate of 75 feet/minute, what time will Cici catch up to Joyce? Assume they start at the only entrance, walk the same path, and meet up before reaching you.

**A) 2:10 PM B) 2:15 PM C) 2:20 PM D) 2:25 PM E) NOTA**

1. Simplify: 

**A)  B) 7 C) 18 D) 27 E) NOTA**

1. The weights (in pounds) of the goats in the petting zoo are as follows: 63, 60, 52, 59, 52, 60, 79, 63, and 52. Find the sum of the mean, median, and mode of the weights (in pounds).

**A) 168 B) 172 C) 180 D) 183 E) NOTA**

1. On your way out, you spot a vendor, Brian, selling candy. Because you are Brian’s 100th customer, you get to choose two lollipops from his box for you and your sister without looking. If there are 8 grape, 3 strawberry, 4 watermelon, and 9 blue raspberry, what is the probability you get two grape lollipops in a row from the flavors listed above if you draw one at a time without putting the first one back?

**A)  B)  C)  D)  E) NOTA**

1. Which of the following letters does **not** have any line of symmetry?

**A) F B) H C) K D) Y E) NOTA**

1. The set of numbers below follow a pattern. Find the number that should replace the question mark.

19, 23, 27, 31, \_\_, \_\_, \_?\_

**A) 35 B) 39 C) 43 D) 47 E) NOTA**

1. You check your watch and you see that it is now 2:37 PM. If you first arrived at the petting zoo at 10:43 AM, how much time has passed since you first arrived?

**A) 2 hours and 6 minutes B) 3 hours and 54 minutes**

**C) 8 hours and 6 minutes D) 8 hours and 54 minutes E) NOTA**

1. Allison and Jessie are awesome! If they are able to write 10 questions in 2 hours, in how many hours were they able to write 30 questions assuming they work at a constant rate?

**A)**  **B) 10 C)  D) 75 E) NOTA**