

1 A large organization uses a phone tree to contact members.

Mark your answer here: 1. (A)(B)(C)(D)

- The director first contacts 3 members. This is the 1st set of calls.
- Each member who was contacted in the 1st set of calls then contacts 3 different members who were not previously contacted. This is the 2nd set of calls.
- The pattern continues with each member contacting 3 different members who were not previously contacted.

The table below shows the number of members contacted in each set of calls.

Phone Tree Calls

Set of Calls	Number of Members Contacted in This Set of Calls
1st	3
2nd	9
3rd	27
4th	81

If the pattern continues, what is the number of members who would be contacted in the 6th set of calls?

- A. 216
- B. 324
- C. 486
- D. 729



- 2 Melinda invested \$1000 in a retirement account. The formula below shows the amount of money, A , that will be in her account at the end of t years.

$$A = 1000(1 + r)^t$$

In the formula, r is the interest rate, expressed as a decimal. Melinda's account has an interest rate of 6%.

Which of the following is closest to the amount that will be in Melinda's account at the end of 2 years?

- A. \$1120
- B. \$1124
- C. \$1256
- D. \$1360

Mark your answer here: 2. A B C D

- 3 A magazine had 4000 subscribers at the end of the year 2004. The number of subscribers increased by 10% each year as compared with the previous year.

Which of the following is closest to the number of subscribers at the end of the year 2007?

- A. 4330
- B. 4400
- C. 5200
- D. 5320

Mark your answer here: 3. A B C D



4

The label on a cereal box states the following:

Mark your answer here: 4. Ⓐ Ⓑ Ⓒ Ⓓ

- One serving of cereal contains 17 grams of carbohydrates.
- This number of grams is 6% of the maximum amount of carbohydrates that a person should eat in a day.

Based on this information, which of the following is closest to the maximum amount of carbohydrates that a person should eat in a day?

- A. 1.02 grams
- B. 2.83 grams
- C. 102 grams
- D. 283 grams

5

Laila is having shirts made with a logo printed on them to promote her band. The total cost consists of a one-time fee of \$75 to have the logo designed plus \$8 per shirt to print the logo.

Write an equation that Laila can use to determine the total cost, C , in dollars, to make x shirts.

Write your answer here:



Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

- 6 Jason launched a model rocket from the ground. The formula below can be used to determine the height of the rocket above the ground at any time during the rocket's flight.

$$h = 16t(7 - t)$$

In the formula, h and t are defined as follows:

- t = the time, in seconds, that has elapsed since the rocket was launched
- h = the height, in feet, of the rocket above the ground at time t

Use the formula to answer the following questions.

- What was the height, in feet, of the rocket 1 second after it was launched? Show your work.
- What was the height, in feet, of the rocket 6 seconds after it was launched? Show your work.
- The value of h was 0 when the rocket hit the ground. How many seconds after the rocket was launched did it hit the ground? Show your work.
- How many seconds after the rocket was launched was the height of the rocket 160 feet? Show your work.

