**Write the letter of the correct answer. In all cases, E) NOTA means “none of these answers”. Correct answers are worth 5 points, answers left blank are worth one point, and incorrect answers are worth no points.**

1. If Joyce gets three dozen roses from her secret admirer, Cici gets a half dozen roses from hers, and Ismael gets a baker’s dozen, how many roses do all three of them have in total?

**A. 45**

**B. 54**

**C. 55**

**D. 57**

**E. NOTA**

Use this information for questions 2-3:

A person’s popularity can be measured by how many Valentines they receive. Their popularity score is equal to half the sum of seventeen and five times the number of Valentines received.

2. If Arya got twenty-five Valentines and David got ten, how much more popular is Arya than David?

**A. 33.5**

**B. 37.5**

**C. 38.5**

**D. 71**

**E. NOTA**

3. Jamie has the highest popularity score, 133.5. How many Valentines did she receive?

**A. 30**

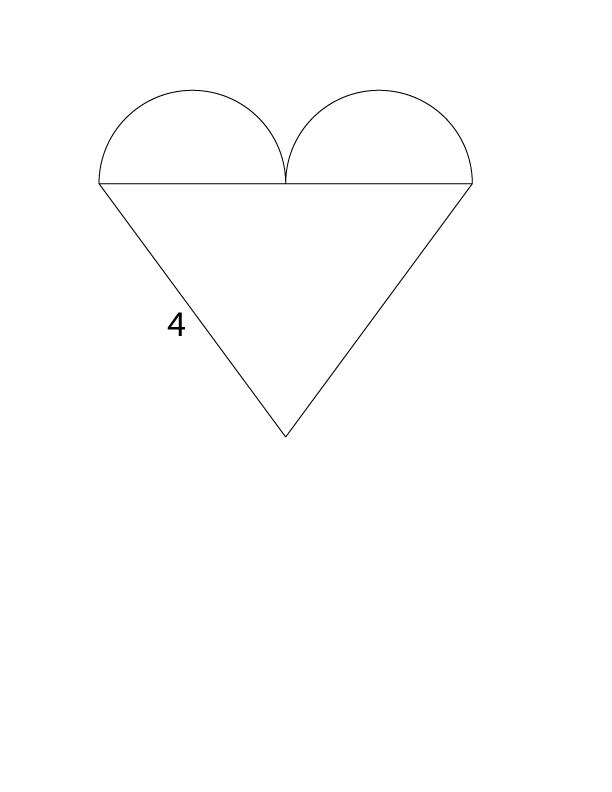
**B. 50**

**C. 100**

**D. 130**

**E. NOTA**

4. Gabby is making a heart out of construction paper. To make it, she first cuts out a triangle, then two semicircles to put on top of it.



She has already cut out an equilateral triangle, with side length of 4 inches. What is the combined area of the two semicircles?

**A. in**

**B. π in2**

**C. 2π in2**

**D. 4π in2**

**E. NOTA**

5. Everyone knows the best part of Valentine’s Day is the candy. If Brian eats ten and a half chocolates per hour, how many chocolates will Brian have eaten after seven hours?

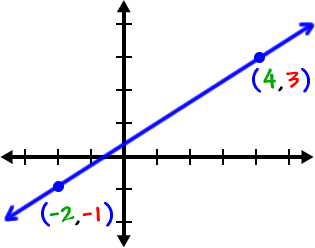
**A. 65.5**

**B. 70.5**

**C. 73.5**

**D. 90.5**

**E. NOTA**

[](http://www.google.com/url?sa=i&rct=j&q=slope+of+a+line&source=images&cd=&cad=rja&docid=cdvzboxGcmp9mM&tbnid=ZvKhbt-2QCZZDM:&ved=0CAUQjRw&url=http://www.coolmath.com/algebra/08-lines/06-finding-slope-line-given-two-points-01.htm&ei=aZeCUqqhIcXqkAeJ_4CQDg&bvm=bv.56146854,d.eW0&psig=AFQjCNETvsUvyPgYy2m5p5ZlBtT1rop0wQ&ust=1384376547709228)6) Nilay is at the point (-2, -1) and his girlfriend, Arya, is

at the point (4, 3). If Nilay wants to give Valentine’s

flowers to Arya, what is the slope of the line he has to

climb to get to Arya?

**A.  B.  C. **

**D.  E. NOTA**

7. A Valentine’s Day card is $1.49. If Allison wants to buy nineteen cards, how much will she pay (not including tax)?

**A. $12.75**

**B. $19.49**

**C. $20.49**

**D. $28.31**

**E. NOTA**

8. If there are twenty-five kids in the class, and each of them sends one Valentine to everyone in the class (except themselves), how many Valentines were sent in total?

**A. 300**

**B. 576**

**C. 600**

**D. 625**

**E. NOTA**

9. Kaitlin gives Vy a box of milk and dark chocolates for Valentine’s Day. Of the twenty-five chocolates, ten are dark chocolate. What percentage of the whole box is milk chocolate?

**A. 10%**

**B. 15%**

**C. 40%**

**D. 60%**

**E. NOTA**

10. Jamie absolutely loathes Valentine’s Day because he is always single. If it is a certain event that Jamie is always single on Valentine’s Day, what is the probability of him *not* being single on Valentine’s Day?

**A. 0 B. 5 C. 1 D. cannot be determined E. NOTA**

11. Jessie receives a mysterious love letter from a secret admirer, but it’s written entirely in code! She quickly realizes that the writer has shifted each letter 3 places (D  A, E  B, F  C etc.). The letter is signed MDPLH. Who sent it?

**A. BRIAN**

**B. JAMIE**

**C. JOYCE**

**D. NILAY**

**E. NOTA**

12. Help! Everyone in Mr. Friedlander’s math class is lovestruck from Valentine’s Day and can’t do math. What is the next term in the following sequence?

1 2 4 4 9 8 16 16 25 32 36 \_\_

**A. 64**

**B. 49**

**C. 36**

**D. 35**

**E. NOTA**

13. Two fracks equal a frick. Three fracks equal a frink. Together, there are 42 fricks, fracks, and frinks. How many fricks are there?

**A. 7**

**B. 14**

**C. 21**

**D. 42**

**E. NOTA**

14. Siddu wants to impress girls with his vast knowledge of math, specifically about pi (π). What is the fifth digit of π after the decimal point?

**A. 1**

**B. 4**

**C. 5**

**D. 9**

**E. NOTA**

15. The figure below represents Arya’s card for Valentine’s Day:

3

3

4

4

4

4

9

6

What is the area of Arya’s card?

**A. 24**

**B. 36**

**C. 72**

**D. Not enough information**

**E. NOTA**

16. Sarah owns the most popular flower shop in town. The number of different types of flowers she sells can be found by evaluating his expression: 3 ∙ 4 + 23 – 10 ∙ 0 – 2. How many different types of flowers does Sarah have in her shop?

**A. -2**

**B. 16**

**C. 18**

**D. 40**

**E. NOTA**

17. Taylor packages her chocolate in rectangular boxes with the dimensions 8 inches, 8 inches, and 2 inches. What is the volume of one of Taylor’s boxes?

**A. 128 in3**

**B. 128 in2**

**C. 64 in3**

**D. 64 in2**

**E. NOTA**

18. Taylor makes the finest chocolate known to man. If each batch of her recipe makes 45 pieces and she packages each box by the dozen, how many boxes can she make out of one batch? (Express as a mixed number in simplest form)

**A.**

**B.**

**C.**

**D.**

**E. NOTA**

19. Michael the Teddy Bear Collector has more teddy bears than anyone in the world: Three hundred thousand less than three hundred fifty thousand. How many teddy bears does Michael have?

**A. 50**

**B. 500**

**C. 5000**

**D. 50000**

**E. NOTA**

20. Nilay is showing a card trick to Amelia to win over her heart. In order for the trick to work, Amelia must draw a face card (J, Q, or K). What is the probability she draws a face card out of a standard-52 card deck?

**A.  B.  C.  D. 0 E. NOTA**

21. Nilay the Nerd, standing at (0,3), must deliver a fedora to Amelia the Awesome, who is standing at (4,0), as a Valentine’s Day gift. What is the distance Nilay must travel to reach Amelia? (Hint: Use the Pythagorean Theorem)

**A. 7**

**B. 5**

**C.**

**D. 1**

**E. NOTA**

22. Being a nerd, Nilay wants to first calculate the slope of the line created from his coordinate location of (0,3), and Amelia’s coordinate location of (4,0). What is the slope of this line?

**A.**

**B.**

**C.**

**D.**

**E. NOTA**

23. Katherine’s favorite number can be found by solving for x from the following system of equations:

x + y = 10

y = 5 - 3

**A. 8 B. 5 C. 2 D. not enough information E. NOTA**

24. Doreen gets a free teddy bear if she can solve this problem. Let the operation be A☺B be defined as . Evaluate 7 ☺ 8.

**A. -15**

**B.**

**C.**

**D. 15**

**E. NOTA**

25. Nick receives a bag of M&M’s for Valentine’s Day. The color distribution is 23% blue, 17% red, 14% green, 13% yellow, and X% brown. What percentage is brown?

**A. 0%**

**B. 16.75%**

**C. 20%**

**D. 67%**

**E. NOTA**

26. Andrew buys 136 flowers! What is the prime factorization of 136?

**A. 2 ∙ 68**

**B. 2 ∙ 2 ∙ 34**

**C. 2 ∙ 4 ∙ 17**

**D. 23 ∙ 17**

**E. NOTA**

27. Izzy jumps into his car to deliver candy to his sweetheart, Cici, for Valentine’s Day. The gas tank of Izzy’s car can hold 12 gallons of gas and uses  of a gallon of gas per mile. There are 4 gallons of gas left in Izzy’s car when he arrives at Cici’s. Assuming Izzy started with a full tank of gas and he makes no additional stops, how far did Izzy drive, in miles, to get to Cici’s place?

**A. 1.7**

**B. 80**

**C. 160**

**D. 240**

**E. NOTA**

28. Samantha makes a Valentine’s Day card in the shape of a triangle. If 2 of the angle measures are 28° and 37°, what is the value of the unknown measure?

**A. 25°**

**B. 65°**

**C. 115°**

**D. 295°**

**E. NOTA**

29. Mr. Friedlander hosts a Valentine’s Day party for the Mu Alpha Theta club. The number of people he invites is equal to when a=3 and b=2. How many people did Mr. Friedlander invite?

**A. 18 B. 96 C. 324 D. undefined E. NOTA**

30. Katherine and Kathryn spend their Valentine’s Day writing Mu Alpha Theta questions. If Kathryn writes 5 questions per hour, and Katherine writes 3 questions per hour, how many questions will they have written in half of a day? (Note: 24 hours in a day, and they are working with no breaks)

**A. 8**

**B. 24**

**C. 96**

**D. 192**

**E. NOTA**