1. **C:** Three dozen = 3 ∙ 12 = 36. Half dozen = ∙ 12 = 6. Baker’s dozen = 13. 36 + 6 + 13 = 55.

2. **B:** Arya’s popularity score: = 71. David’s popularity score: = 33.5. 71 – 33.5 = 37.5.

3. **B:** Popularity score = (x = number of Valentines received). Set equal to 133.5 and solve for x: 133.5 = → 267 = 5x + 17 → 250 = 5x → 50 = x. Jamie received 50 Valentines.

4. **B:** The triangle’s side is 4 inches, which is divided into two equal halves, so the diameter of each semicircle is 2, and the radius of each semicircle is 1. The area of a semicircle is , so the area of each semicircle is π, and the area of the two semicircles together is π.

5. **C:** 10.5 chocolates per hour ∙ 7 hours = 73.5 chocolates.

6. **C:** Nilay has to go up 4 units and to the right 6 units, so the slope is .

7. **D:** Cost of one card ∙ number of cards = total amount paid. $1.49 ∙ 19 = $28.31.

8. **C:** there are 25 kids, and they each send 24 Valentines. 25 ∙ 24 = 600.

9. **D:**  = = 60%.

10. **A:** Probabilities always range from 0 to 1, 0 being an impossible event and 1 being a certain event. It was given that Jamie being single is a certain event, so Jamie not being single is an impossible event, and therefore has probability 0.

11. **B:** MDPLH = JAMIE. J  M, A  D, M  P, I  L, E  H.

12. **A:** There are two sequences going on here that alternate. Since we need to find the 12th term, look at the even numbered terms : 2, 4, 8, 16, 32. They double, so the next term is 64.

13. **B:** 2 fracks = frick, 3 fracks = frink, fricks + fracks + frinks = 42. By substitution, you get 14 fricks.

14. **D:** π=3.14159… Second digit = 9.

15. **B:** Area of triangle = (base)(height). Area of one small triangle= = 6. Area of large triangle= = 24. Area of two small triangles + area of large triangle = 6+6+24 = 36

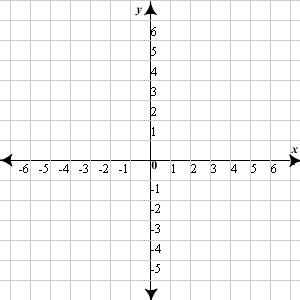
16. **C:** (3∙4+23)-10∙0-2 → (3∙4+8)-10∙0-2 → (12+8)-10∙0-2 → 20-10∙0-2 → 20-0-2 → 18

17. **A:** 8 inches × 8 inches × 2 inches; Volume of rectangular prism=8in∙8in∙2in=128in3.

18. **C:** == (simplest form)

19. **D:** 350,000-300,000=50,000

20. **B:** Face cards include J, Q, and K. probability of drawing a face card per suit. 4 suits in a standard-52 card deck → =.

21. **B:** (0,3), (4,0) Pythagorean Theorem: → 32 + 42 = 52

3

5

4

22. **B:** (0,3), (4,0); slope = → slope = = .

23. **A:** x+y=10 and y=5-3 → y=2 → x+2=10 → x=8.

24. **A:** 7☺8 = = = -15.

25. **E:** 23% + 17% + 14% + 13% + X% = 100% → 67% + X% = 100% → X=33%.

26. **D:** 136 = 2∙2∙2∙17 = 23∙17.

27. **C:** Izzy’s car gets 20 miles per gallon. Since he used 8 gallons of gas, he travelled

8 • 20 = 160 miles.

28. **C:** Triangles contain 180°. 28° + 37°=65° → 180°-65°=115°.

29. **B:** = = = 96.

30. **C:** Katherine- 3 questions per hour; Kathryn- 5 questions per hour; Katherine and Kathryn- 8 questions per hour. 8 questions per hour ∙12 hours = 96 questions.