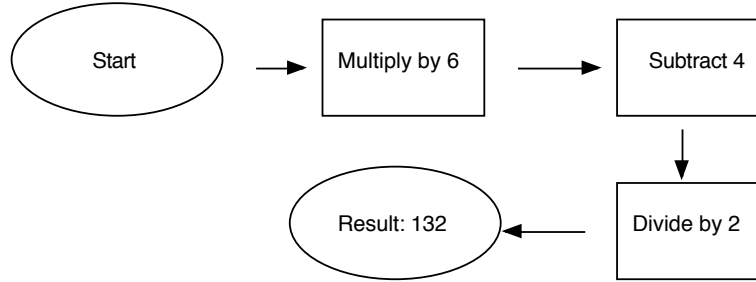


1. What is the starting number in this flowchart?



- 9.5 is the starting number.
 - 383 is the starting number.
 - $10\frac{5}{6}$ is the starting number.
 - $44\frac{2}{3}$ is the starting number.
 - 47 is the starting number.
2. Sal's average for the first 6 tests was 97. Sal made the same score on the first 5 tests. The last test score was 12 points lower than the previous 5 tests. What was Sal's score on the last test?
- Sal's score on the last test was 85.
 - Sal's score on the last test was 87.
 - Sal's score on the last test was 89.
 - Sal's score on the last test was 90.
 - Sal's score on the last test was 91.
3. The Mets won 17 more games than they lost. They played 52 games in all and tied three. How many games did they lose?
- The Mets lost 16 games.
 - The Mets lost 32 games.
 - The Mets lost 35 games.
 - The Mets lost 17.5 games.
 - The Mets lost 18 games.
4. Utility poles are placed at regular intervals. The distance from the first pole to the fifth pole is 300 feet. What is the distance from the tenth pole to the twentieth pole?
- 60 feet
 - 600 feet
 - 750 feet
 - 6000 feet
 - 75000 feet

5. What 2-digit number is 2 more than a multiple of 6 and 20 more than a perfect square?

- a. 80
- b. 84
- c. 62
- d. 56
- e. 29

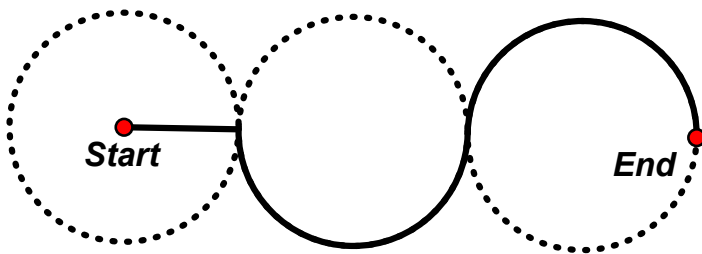
6. What is the product of $\left(1 - \frac{1}{2}\right)\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{24}\right)\left(1 - \frac{1}{25}\right)$?

- a. $1 - \frac{1}{25!}$
- b. 0.04
- c. $\frac{1}{25!}$
- d. $\frac{24}{25}$
- e. 0.96

7. The difference between two positive numbers is 10. The product of the same two numbers is 651. What is the sum of the two numbers?

- a. 42
- b. 52
- c. 62
- d. 72
- e. 82

8. A path is laid out as shown below. Each circle has a radius of 8 meters. The dark solid line shows the path. How long is the path? Round to the nearest tenth of a meter.



- a. 64.0 meters
- b. 33.1 meters
- c. 58.3 meters
- d. 201.0 meters
- e. 401.9 meters

9. These are the first five terms of a sequence that consists of all the counting numbers that are **NOT** perfect squares:

2, 3, 5, 6, 7, ...

What is the 100th number in this sequence?

- a. 101
 - b. 108
 - c. 109
 - d. 110
 - e. 111
10. What is the exact sum of 30% of $\frac{1}{3}$ of 25% of 180 *and* 40% of $\frac{2}{5}$ of 10% of 4000?
- a. 776.8
 - b. 68.455
 - c. 68.5
 - d. 784
 - e. 784.5
11. A deck of cards has 52 cards. There are 13 blue cards, 13 red cards, 13 green cards, and 13 yellow cards. What is the **least** number of cards that must be drawn to **guarantee** at least 5 cards that are the same color?
- a. 40 cards
 - b. 17 cards
 - c. 6 cards
 - d. 10 cards
 - e. 20 cards
12. A square and a rectangle have the same area. The perimeter of the square is 36 inches, and the width of the rectangle is 6 inches. What is the perimeter of the rectangle?
- a. 38 inches
 - b. 13.5 inches
 - c. 19.5 inches
 - d. 81 inches
 - e. 39 inches
13. You need to fill a hole with 2 cubic yards of dirt. You put 3 cubic feet of dirt into the hole each day after school. How long will it take you to fill the hole?
- a. It will take 2 days.
 - b. It will take 3 days.
 - c. It will take 6 days.
 - d. It will take 12 days.
 - e. It will take 18 days.

14. What is the remainder when the product $2011^2 \cdot 2013^3 \cdot 2017^5$ is divided by 5?

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4

15. Chairs were arranged in a rectangular array. A prize was taped to the bottom of the chair that was fourth from the front, 5 from the back, second from the left, and sixth from the right. How many chairs were in the rectangular array?

- a. 72 chairs
- b. 56 chairs
- c. 30 chairs
- d. 42 chairs
- e. 45 chairs

16. Which number should be removed from the list below so that the mean is exactly 27.25?

23 24 25 26 27 28 29 30 31

- a. 25
- b. 26
- c. 27
- d. 28
- e. 29

17. Which one of the following statements is mathematically correct?

- a. Three is six divided by eighteen.
- b. A dime is worth 0.10¢ .
- c. Eight subtracted from three is five.
- d. Zero divided into 6 is zero.
- e. Fourteen is a multiple of seven.

18. Which type of triangle is impossible?

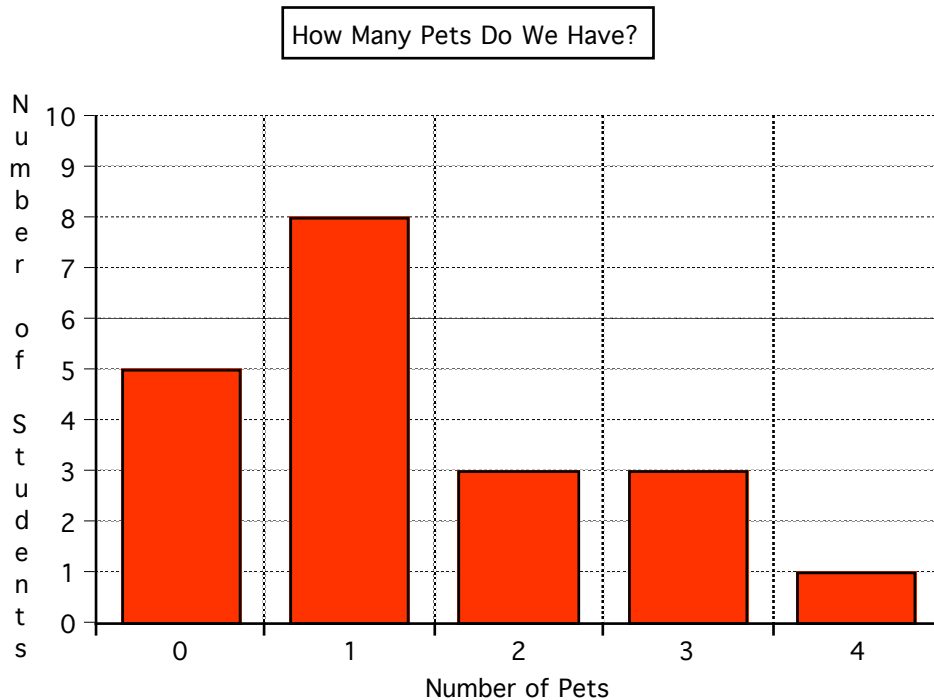
- a. Right scalene triangle
- b. Acute equilateral triangle
- c. Obtuse scalene triangle
- d. Acute isosceles triangle
- e. Obtuse equilateral triangle

19. There is a park halfway between Bob's house and Dee's house. Their homes are 12 kilometers apart. Bob rides his bike at an average speed of 6 km per hour. Dee rides at an average speed of 8 km per hour. What time should each leave home so that they both arrive at the park at 9:00 am?
- Bob should leave at 8:00 am and Dee should leave at 8:40 am.
 - Bob should leave at 8:00 am and Dee should leave at 8:45 am.
 - Bob should leave at 8:30 am and Dee should leave at 8:20 am.
 - Bob should leave at 8:20 am and Dee should leave at 8:30 am.
 - Bob should leave at 8:00 am and Dee should leave at 8:15 am.
20. The product of the ages (in whole numbers of years) of the twins and their mother is 225. What is the sum of their ages?
- 31 years
 - 32 years
 - 33 years
 - 34 years
 - 35 years
21. A car rental agency charges \$37.50 per day plus \$0.25 per mile to rent a car. (Note the car rental agency rounds any part of a mile up. For example, 34.1 miles would be rounded to 35 miles.) You budget \$100 for a 1-day rental. What is the maximum number of miles you can drive without going over your budget?
- 400 miles
 - 250 miles
 - 62.5 miles
 - 62 miles
 - 63 miles
22. These numbers are palindromes: 33, 181, 2002, 32123. What is the least positive number that can be added to 50607 to make a number that is a palindrome?
- 8
 - 1008
 - 98
 - 108
 - 10,008

23. A spool of ribbon contains 24 yards. A dressmaker wants to make bows that require $1\frac{2}{3}$ yards each. The dressmaker makes the greatest number of bows possible from the spool. How much ribbon will be left over?

- a. $\frac{9}{20}$ yard
- b. $\frac{2}{3}$ yard
- c. $1\frac{3}{5}$ yards
- d. $\frac{2}{5}$ yard
- e. 0 yards

24. All the students in Mr. Jones class filled out a survey that asked how many pets they owned. The data are shown in the graph below. According to the graph, which statement is true?



- a. Twenty students responded to the survey.
- b. The class has a total of 20 pets.
- c. There is one student who has 8 pets.
- d. There are exactly four students who have each have one pet.
- e. The average number of pets per person is exactly 2.

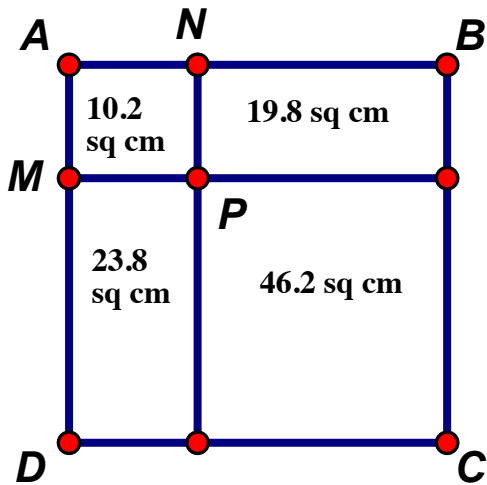
25. In Kansas, streets are straight. One city in Kansas has the following streets: Ash Street is perpendicular to Oak Street. Maple Street is parallel to Elm Street. Elm Street is perpendicular to Oak Street. Which of the following statements is false?

- a. If Oak Street runs from east to west, the other three streets run north to south.
- b. Elm Street is parallel to Ash Street.
- c. Maple Street is parallel to Ash Street.
- d. Oak Street is parallel to Ash Street.
- e. Oak Street is perpendicular to Ash Street.

26. Bee and Kay decided to save money. Each chose a jar and put \$10 in it. Bee decided to add \$1 per month to her jar. Kay will add \$3 per month to her jar. In how many months will Kay have exactly twice as much money in her jar as Bee does?

- a. 3 months
- b. 5 months
- c. 8 months
- d. 10 months
- e. 12 months

27. A square measuring 10 centimeters on each side is divided by a vertical line and a horizontal line as shown below. The areas of the four resulting regions are given. What is the perimeter of rectangle ANPM?



- a. 10.2 cm
- b. 6.4 cm
- c. 12.8 cm
- d. 10.4 cm
- e. 20.8 cm

28. What numeral will be written directly below 25 when this triangular array is extended as shown below.

1				
2	3			
4	5	6		
7	8	9	10	
11	12	13	14	15

- a. 29
 - b. 30
 - c. 31
 - d. 32
 - e. 33
29. Given that $\frac{1}{9}$ of a number is $\frac{1}{7}$, what is $\frac{7}{9}$ of the number?

- a. $\frac{1}{63}$
- b. $\frac{7}{63}$
- c. $\frac{9}{7}$
- d. 1
- e. 7

30. The faces of a cube are numbered 1, 2, 3, 4, 5, 6. The cube is weighted so that it is twice as likely to land with an odd number on top as an even number. All the odd numbers are equally likely to land on top. All the even numbers are equally likely to land on top. What is the probability that the cube will land with a 3 on top?

- a. $\frac{1}{6}$
- b. $\frac{1}{3}$
- c. $\frac{2}{3}$
- d. $\frac{1}{9}$
- e. $\frac{2}{9}$