

Mathematical Processes

SPI 0506.1.1 Drawing Conclusions (69)

SPI 0506.1.2 Estimations of Fractions and Decimals (52 & 59)

SPI 0506.1.3 Recognize Units (56 & 58)

SPI 0506.1.4 Identify Missing Information (57)

69. Susie has a two-dimensional shape. Her shape has 4 sides. Each pair of sides is either parallel or perpendicular.

Which could be Susie's shape?

- A. octagon
- B. rectangle
- C. triangle
- D. pentagon

52. The average monthly rainfall for the District of Columbia is shown in the table below.

Month	Rainfall (inches)
January	3.2
February	2.6
March	3.6
April	2.8
May	3.8
June	3.1
July	3.7
August	3.4
September	3.8
October	3.2
November	3.1
December	3.1

About how many inches of rain fall per year?

- A. 20 inches
- B. 30 inches
- C. 40 inches
- D. 50 inches

59. Estimate the answer to the following problem.

$$2\frac{1}{4} + 4\frac{4}{5} - 3\frac{1}{8} =$$

- A. 5
- B. 4
- C. 3
- D. 2

56. Mrs. Roscoe will string colorful beads to make 4 bracelets. She has 126 beads. Each bracelet must get the same number of beads.

How many beads will she be able to string on each bracelet and how many beads will she have remaining?

- A. 30 beads for each bracelet, 6 beads remaining
- B. 30 beads for each bracelet, 2 beads remaining
- C. 31 beads for each bracelet, 4 beads remaining
- D. 31 beads for each bracelet, 2 beads remaining

58. Rachel evenly divided 48 roses into 3 vases.

Which statement best explains how Rachel divided the roses?

- A. She placed 14 roses into each vase and had 3 roses left over.
- B. She placed 15 roses into each vase and had 2 roses left over.
- C. She placed 16 roses into each vase and had 1 rose left over.
- D. She placed 16 roses into each vase and had 0 roses left over.

57. Cornice is trying to solve the following problem:

Jack works part-time in a department store. He will spend $\frac{3}{8}$ of what he earns on clothes and entertainment. He will save the remaining money. If Jack sticks to his budget, how much can he spend on clothes and entertainment each month?

What additional information does Cornice need to solve this problem?

- A. How many items does Jack want to purchase?
- B. What type of items does Jack want to purchase?
- C. How much money does Jack earn each month?
- D. Cornice has enough information to solve the problem.

Number and Operations

SPI 0506.2.1 Read and Write Numbers (45)

SPI 0506.2.5 Add/Sub. of Fractions and Decimals (46)

SPI 0506.2.6 Add/Sub. Fractions and Mixed Numbers (50)

SPI 0506.2.7 Equivalent Representations (66 & 68)

SPI 0506.2.9 Compare Whole Numbers, Decimals, and Fractions (43)

45. How is "twelve thousandths" written in numbers?

- A. 0.00012
- B. 0.0012
- C. 0.012
- D. 12,000

46. A new toy costs \$12.99 plus \$0.81 in sales tax. Reginald pays for this toy with a \$20.00 bill.

How much change will he get back?

- A. \$6.20
- B. \$6.29
- C. \$7.20
- D. \$7.29

$$50. 2\frac{3}{4} + 3\frac{5}{6} =$$

- A. $6\frac{4}{5}$
- B. $6\frac{7}{12}$
- C. $5\frac{4}{5}$
- D. $5\frac{7}{12}$

66. Which of the following is equal to $\frac{22}{5}$?

- A. $2\frac{2}{5}$
- B. $2\frac{4}{5}$
- C. $4\frac{2}{5}$
- D. $4\frac{4}{5}$

68. How is $\frac{1}{8}$ written as a decimal?

- A. 0.125
- B. 1.25
- C. 12.5
- D. 125

43. Which of the following statements is true?

- A. $\frac{2}{3} < \frac{3}{6}$
- B. $\frac{3}{4} < \frac{2}{5}$
- C. $\frac{3}{4} < \frac{3}{6}$
- D. $\frac{2}{5} < \frac{1}{2}$

Algebra

SPI 0506.3.1 Evaluate Algebraic Expressions (47 & 64)

SPI 0506.3.2 Evaluate Multi-Step Expressions (63)

SPI 0506.3.3 Single-Step Equations of Fractions and Mixed Numbers (67)

SPI 0506.3.4 Identify Values for Inequalities (48 & 65)

47. What is the value of the expression below, when $n = 0.5$?

$$(32 \times n) \div n$$

- A. 128
- B. 64
- C. 32
- D. 16

64. What is the value of the expression below,

$$\text{when } n = \frac{1}{3}?$$

$$(18 \div n) + 6$$

- A. 8
- B. 12
- C. 20
- D. 60

63. $2\frac{3}{4} + 3\frac{5}{6} - \frac{1}{12} =$

- A. $6\frac{4}{5}$
- B. $6\frac{1}{2}$
- C. $5\frac{4}{5}$
- D. $5\frac{7}{12}$

67. What value of n makes this equation true?

$$\frac{4}{5}n = 1$$

- A. $n = 1\frac{1}{4}$
- B. $n = 1\frac{1}{5}$
- C. $n = \frac{1}{4}$
- D. $n = \frac{1}{5}$

48. Look at the inequality below.

$$3n + 1 > 46$$

Which set contains only values of n that make this inequality true?

- A. {16, 20, 24, 28}
- B. {15, 18, 21, 24}
- C. {14, 16, 18, 20}
- D. {13, 14, 15, 16}

65. Look at the inequality below.

$$4n + 3 \leq 15$$

Which set contains only values of n that make this inequality true?

- A. {0, 1, 2, 3}
- B. {1, 2, 3, 4}
- C. {2, 3, 4, 5}
- D. {3, 4, 5, 6}

Geometry and Measurement

SPI 0506.4.1 Area of Triangles and Parallelograms (62)

SPI 0506.4.2 Perimeter and Area of Irregular Shapes (55)

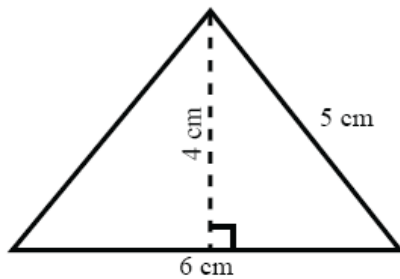
SPI 0506.4.3 Identify 2D/3D Objects (53)

SPI 0506.4.4 Surface Area and Volume of Prisms (49)

SPI 0506.4.5 Length of Line Segments (60)

SPI 0506.4.6 Reasonable Degree of Accuracy (61)

62. Reggie is building a model rocket. He wants to find the area of a triangular piece used to build his rocket.

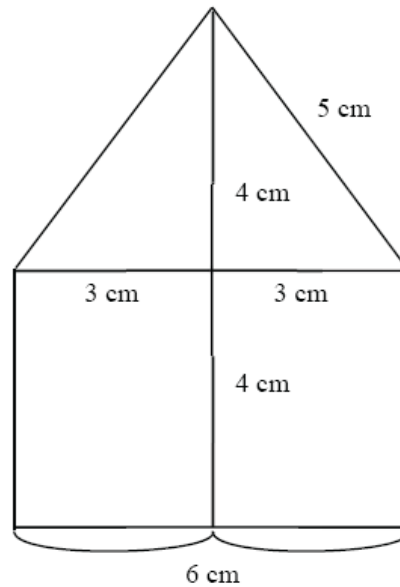


What is the area of this triangular piece?

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

- A. 6 square centimeters
- B. 12 square centimeters
- C. 15 square centimeters
- D. 25 square centimeters

55. Look at the shape below.



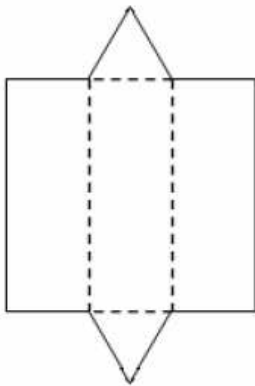
What is the area of this shape?

$$\text{Area of a triangle} = \frac{1}{2} \text{ base} \times \text{height}$$

$$\text{Area of a rectangle} = \text{length} \times \text{width}$$

- A. 20 cm²
- B. 24 cm²
- C. 30 cm²
- D. 36 cm²

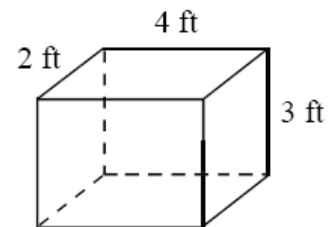
53. Raheem folded the following net along the dotted lines.



What shape is formed by this net?

- A. cube
- B. triangular prism
- C. cone
- D. rectangular pyramid

49. Look at the rectangular prism below.

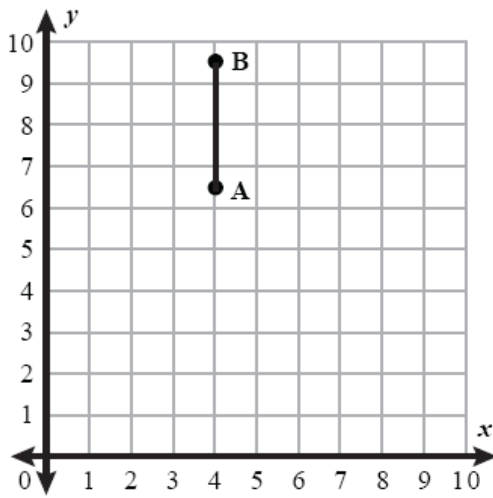


What is the volume of the rectangular prism?

$$\text{Volume} = \text{length} \times \text{width} \times \text{height}$$

- A. 9 ft³
- B. 24 ft³
- C. 26 ft³
- D. 52 ft³

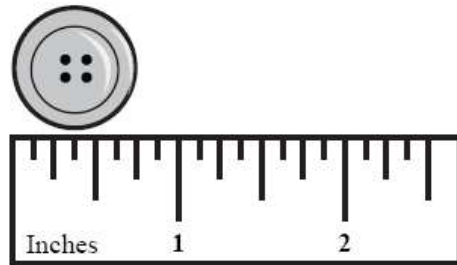
60. Look at the coordinate grid below.



Which is closest to the length of line segment AB?

- A. 3.0 units
- B. 3.5 units
- C. 4.0 units
- D. 4.5 units

61. Look at the button being measured on the ruler below.



To the nearest $\frac{1}{4}$ of an inch, what is the length of the button?

- A. $\frac{1}{4}$ inch
- B. $\frac{1}{2}$ inch
- C. $\frac{3}{4}$ inch
- D. 1 inch

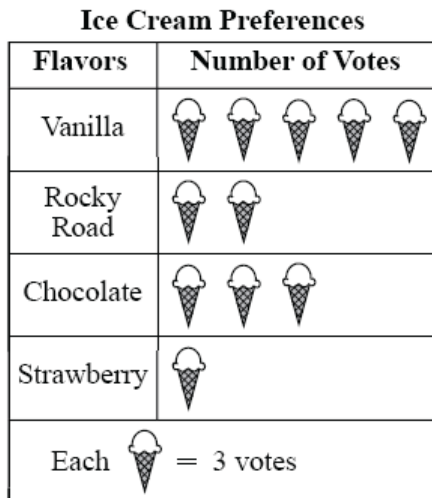
Data Analysis, Statistics, and Probability

SPI 0506.5.1 Various Representations of Data (44 & 70)

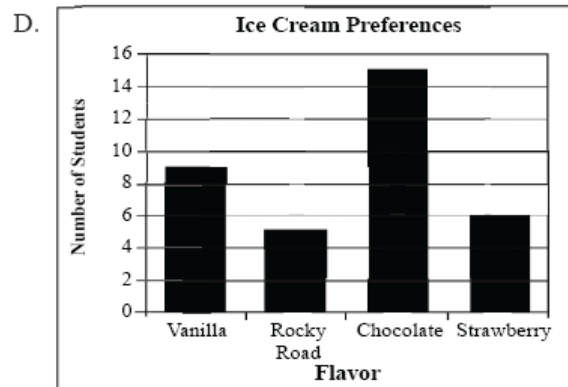
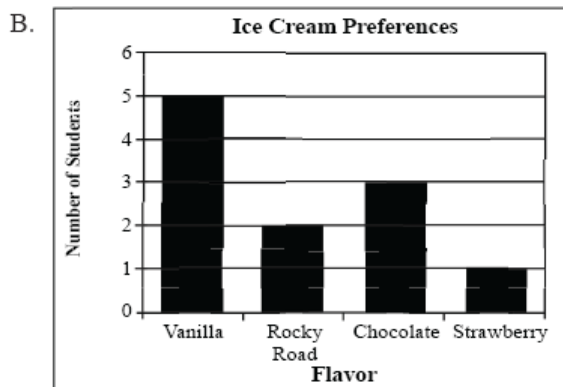
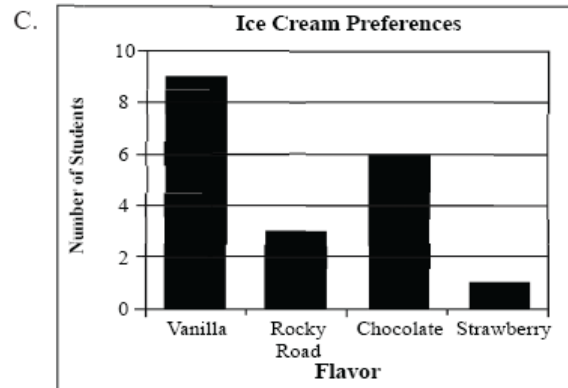
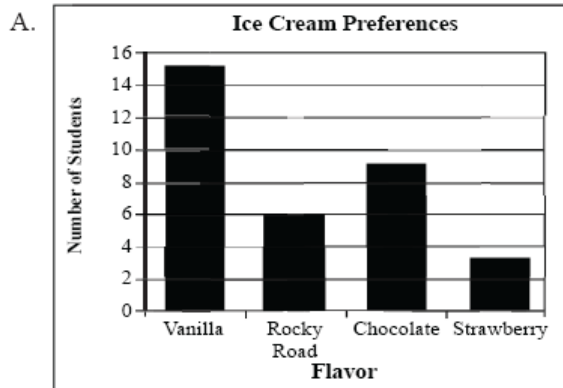
SPI 0506.5.2 Predictions of Data Representations (51 & 54)

SPI 0506.5.3 Calculate Central Tendency (41 & 42)

44. The chart below shows the ice cream preferences of the fifth graders at Oak Hill School.



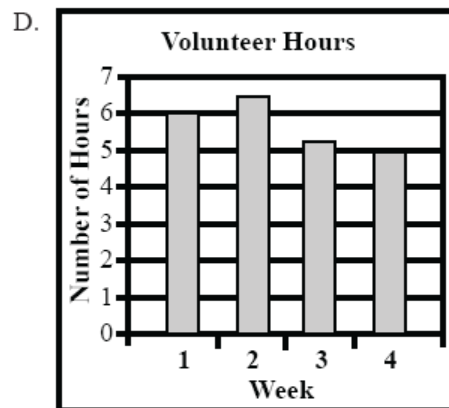
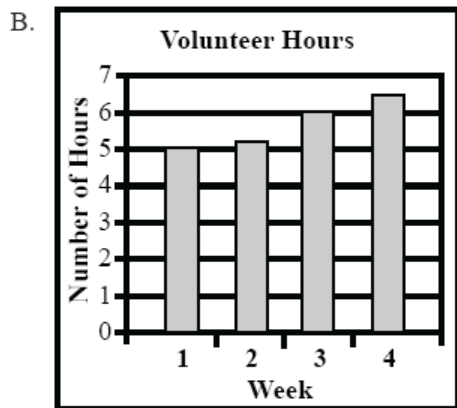
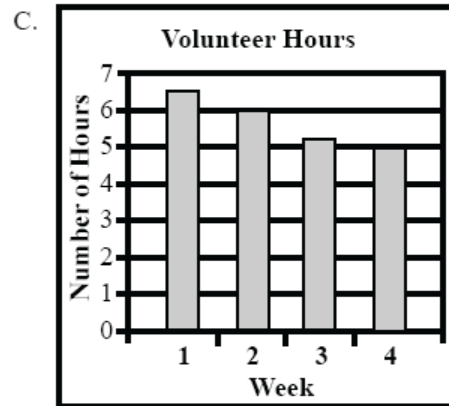
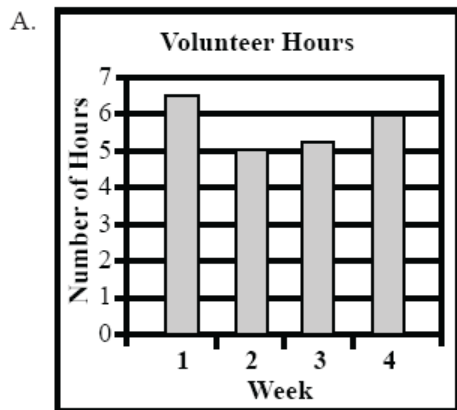
Which bar graph shows the same information that is in the chart?



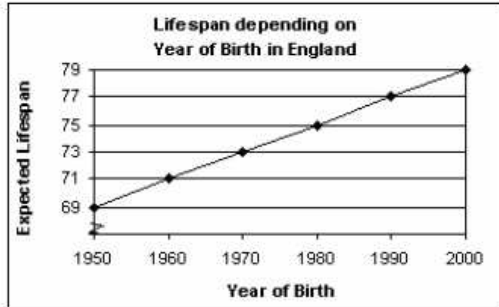
70. Veronica volunteered at a hospital. She recorded the number of hours she volunteered each week.

Volunteer Hours	
Week	Number of Hours
1	6.5
2	5
3	5.25
4	6

Which graph best models the number of hours she volunteered during the course of four weeks?



51. The line graph below shows the number of years a person in England can expect to live depending on year of birth.



Based on the trend in this graph, what will be the expected lifespan of a person born in England in 2020?

- A. 80 years
- B. 81 years
- C. 82 years
- D. 83 years

54. Look at the table below.

Magazine Subscription Sales	
Year	Number of Subscriptions
2003	10,000
2004	12,500
2005	15,625
2006	19,531
2007	24,414

Based on the trend in this table, about how many magazine subscriptions were probably sold in 2008?

- A. 37,000
- B. 31,000
- C. 28,000
- D. 26,000

41. What is the median for this set of data?

2.0, 2.0, 2.4, 2.4, 2.4, 2.6, 2.8, 3.4, 4.0, 4.0

- A. 2.0
- B. 2.4
- C. 2.5
- D. 3.5

42. An airline had 3 flights to Texas today. The first flight had 238 passengers, the second had 202, and the last had 178.

Based on these 3 flights, what is the mean number of passengers on a flight to Texas?

- A. 60
- B. 202
- C. 206
- D. 618