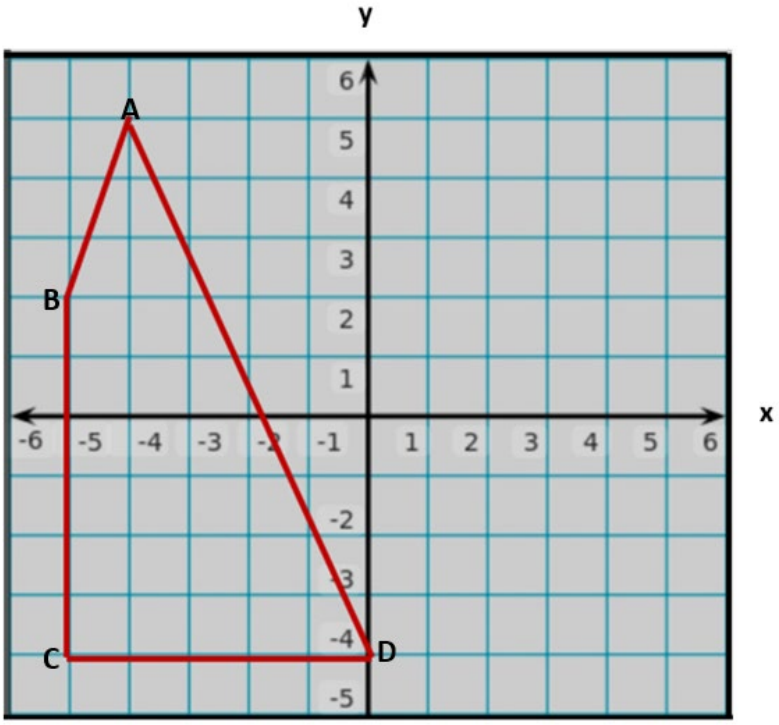
1. Jimi's math teacher gives four tests each 6-weeks period. Jimi scored 90, 85, and 88 on the first three tests. An average of 90 or above on the four tests is required for an A. Jimi received an A. What is the lowest score on the fourth test that Jimi could have made?

   a. 95
   b. 96
   c. 97
   d. 98
   e. 99

2. What is the area of Quadrilateral ABCD?



   a. 22.5 square units
   b. 23.5 square units
   c. 24 square units
   d. 24.5 square units
   e. 25.5 square units

3. Doris and Victor go for a walk. They start at the same place at 4:00 p.m. and travel in the same direction along the same path. Doris walks at a constant speed of 4 miles per hour for 10 minutes, but she tires out and then for the rest of the walk she walks at a constant speed of 2.5 miles per hour. Victor walks at a constant speed of 3 miles per hour for his entire walk. After they begin, Doris is ahead of Victor for a while, but eventually Victor catches up. At what time does Victor catch up with Doris?

   a. 4:25 p.m.
   b. 4:30 p.m.
   c. 4:35 p.m.
   d. 4:40 p.m.
   e. 4:45 p.m.

4. The original price of a bookbag was increased by 5%, and then 8.5% sales tax was added making the cost of the bookbag $23.45. What was the original price of the bookbag (without sales tax, to the nearest cent)?

   a. $9.95
   b. $20.58
   c. $20.66
   d. $21.55
   e. $22.33

5. Blue and red paint are mixed to make Perfect Purple Paint. The ratio of blue to red paint in Perfect Purple Paint is 3:2. What is the minimum number of gallons of blue paint required to make 50 gallons of Perfect Purple Paint?

   a. 20
   b. 25
   c. 30
   d. $30\frac{1}{5}$
   e. $33\frac{1}{3}$

6. It takes $\frac{2}{3}$ of a yard of fabric to make a flag for the Color Guard to use at a marching band performance. Milli has $10\frac{7}{8}$ yards of fabric. When she makes all of the flags that can be made from this amount of fabric, how much fabric will be left over?

   a. $\frac{1}{16}$ yard

   b. $\frac{1}{3}$ yard

   c. $\frac{5}{16}$ yard

   d. $\frac{7}{24}$ yard

   e. $\frac{5}{24}$ yard

7. Mr. Levi, 6th grade math teacher at Primrose Middle School, has three kinds (categories) of assessments which he uses to compute 9 weeks grades. The **Project category** contributes 30% of the 9 weeks grade. The **Test category** contributes 50% of the 9 weeks grade, and the **Homework category** contributes 20% of the 9 weeks grade. During a particular 9 weeks grading period, Mr. Levi gave 1 project, 2 tests, and 3 homework assignments. The second test counted twice as much as the first test. The 3 homework assignments counted equal amounts. Sam made 80 out of 100 possible points on Test 1, and 95 out of 100 possible points on Test 2. He made 90, 100 and 77 (all out of 100 possible points) on the homework assignments. Sam's 9 weeks grade was exactly 90 out of 100 possible points. What was his grade on the project (out of 100 possible points)?

   a. $87\frac{2}{3}$

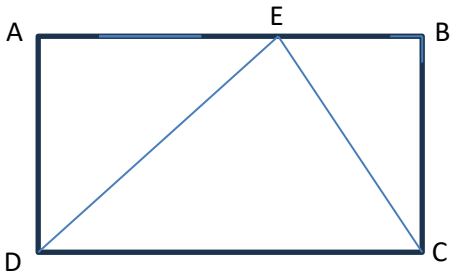
   b. $88\frac{1}{3}$

   c. $89\frac{2}{3}$

   d. $90\frac{2}{3}$

   e. $91\frac{1}{3}$

8. Quadrilateral ABCD is a rectangle. The length of segment AE is 5 inches. The length of segment EB is 3 inches. The area of quadrilateral ABCD is 35 square inches. Find the area of triangle EBC. (Quadrilateral ABCD is not drawn to scale.)



a. 6 square inches
b. $6\frac{9}{16}$ square inches
c. $7\frac{3}{16}$ Square inches
d. $8\frac{3}{16}$ square inches
e. $11\frac{2}{3}$ square inches

9. In Fairyland all money is coins. The coins are called gibs, dibs, tibs, hibs, cibs, and eibs.

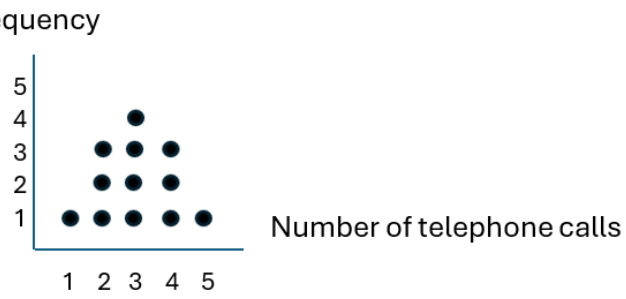
   5 gibs = 1 dib
   5 dibs = 1 tib
   5 tibs = 1 hib
   5 hibs = 1 cib
   5 cibs = 1 eib.

   Daffy has 3130 coins, all gibs. She wants to change her gibs to other coins so that she will not have to carry around so many coins. What is the smallest number of coins into which she can change her 3130 gibs?

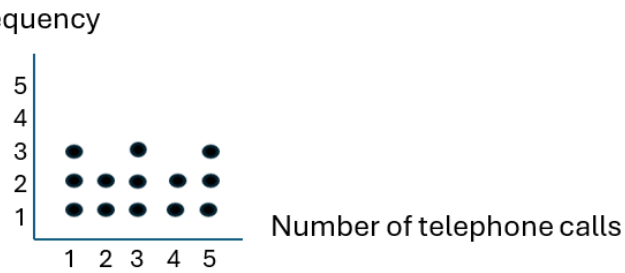
a. 1
b. 2
c. 3
d. 4
e. 5

10. A focus group of sixth grade students was formed at each of Baylor and Taylor Middle Schools. The dot plots below show the number of telephone calls typically made by the focus group students per week.

Baylor Middle School



Taylor Middle School



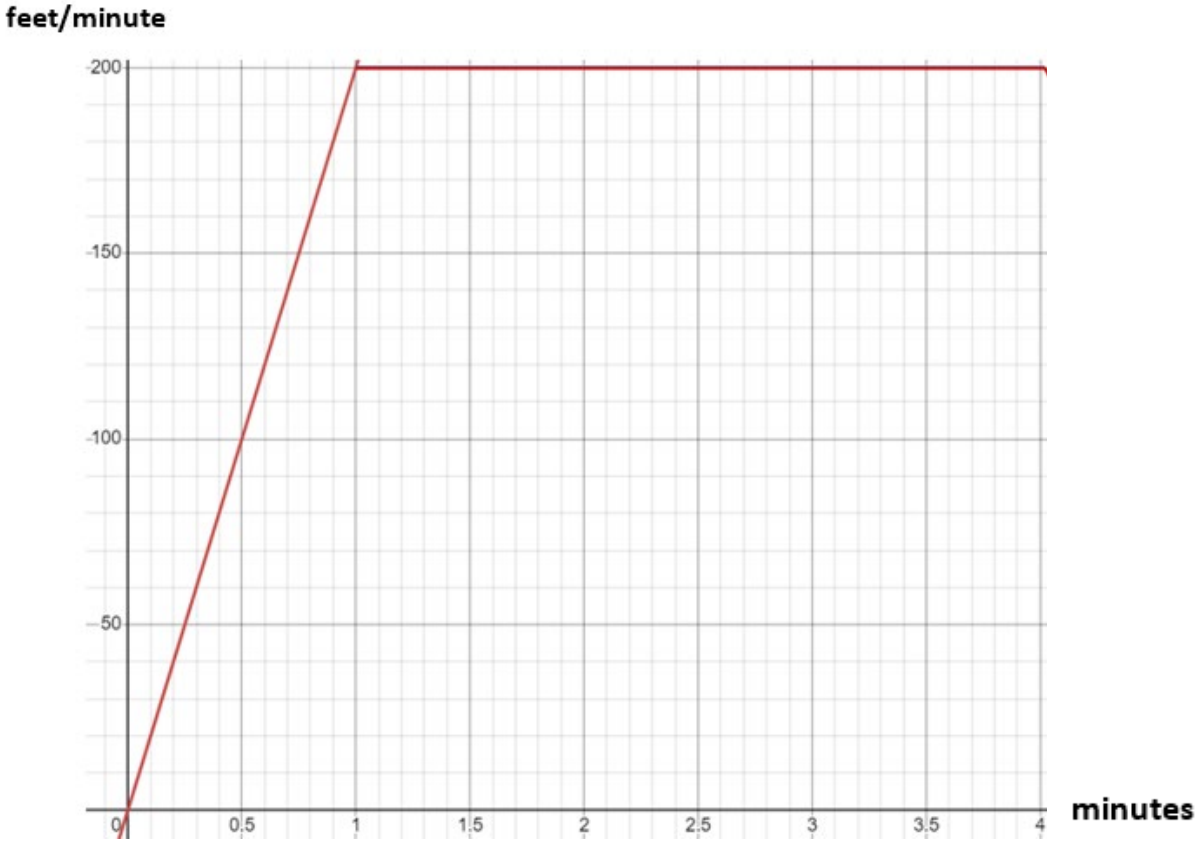
Consider the following statements.

i. The mean number of calls by the focus group students at Baylor Middle School is greater than the mean number of calls by the focus group students at Taylor Middle School.
ii. The mean number of calls by the focus group students at Baylor Middle School is less than the mean number of calls by the focus group students at Taylor Middle School.
iii. The mean number of calls by the focus group students at Baylor Middle School is equal to the mean number of calls by the focus group students at Taylor Middle School.
iv. The mean number of calls by the focus group students at Baylor Middle School is equal to the median number of calls by the focus group students at Taylor Middle School.

Which of the statements above is true?

a. i. only
b. ii. only
c. iii. only
d. i. and iv. only
e. iii. and iv. only

11. Shelly went for a leisurely walk. The following is a graph of Shelly's speed for the first four minutes of her walk.



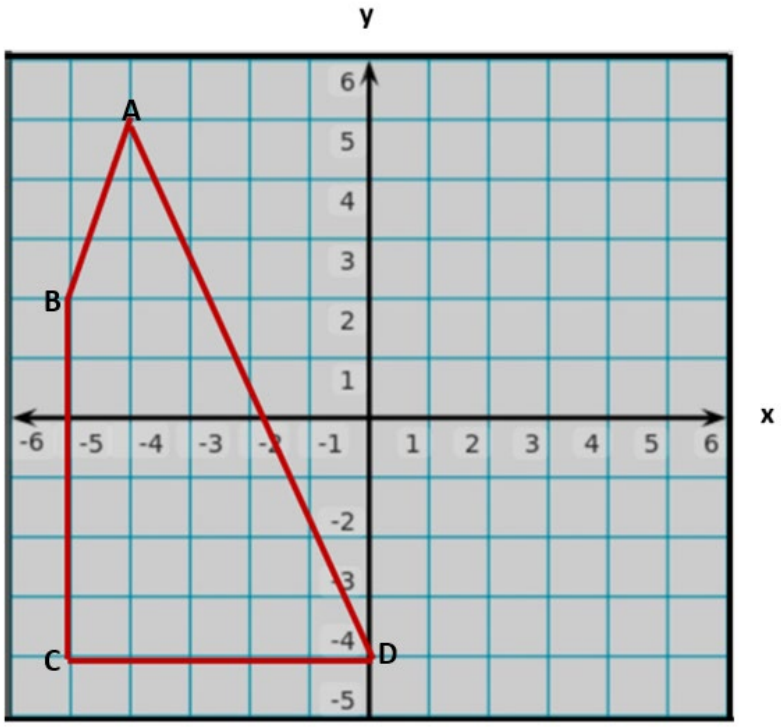
How far did Shelly walk in the first four minutes of her walk?

a. 660 feet
b. 680 feet
c. 700 feet
d. 720 feet
e. 740 feet

12. Suppose that when you double the quantity which is two less than a number, the result is the number increased by 7. Express this as an equation.

a. $2(x-2) = x+7$
b. $2(2-x) = x+7$
c. $2(2-x) = x-7$
d. $2(x-2) = x-7$
e. $2x-2 = x+7$

13. Reflect point C about the y-axis. What are the coordinates of the resulting point?



a. $(-5, -4)$
b. $(-5, 4)$
c. $(5, -4)$
d. $(5, 4)$
e. $(-4, 5)$

14. The least common multiple of two natural numbers is 441. The greatest common divisor of the two numbers is 7. These conditions describe more than one pair of natural numbers. In each possible pair, one of the numbers is smaller than the other. What is largest that the smaller number could be?

a. 7
b. 9
c. 49
d. 56
e. 63

15. What is the result when the expression $\frac{b^5}{\left(\frac{1}{a}\right)^5\left(\frac{a}{b}\right)^5}$ is simplified?

    a. 1
    b. b^{10}
    c. $2b^5$
    d. b^{25}
    e. $(ab)^{10}$

16. A company makes three sizes of cardboard boxes: small, medium, and large. It costs $\$2.50$ to make a small box, $\$4.00$ for a medium box, and $\$4.50$ for a large box. Fixed costs are $\$8000$. Thus, the cost C of making x small boxes, y medium boxes, and z large boxes can be found using the equation
    $C = \$2.50x + \$4.00y + \$4.50z + \$8000.$
    What is the cost of making 500 small boxes, 1000 medium boxes and 200 large boxes?

    a. $\$14,150.00$
    b. $\$26{,}700.00$
    c. $\$6{,}150.00$
    d. $\$18{,}700.00$
    e. $\$10{,}070.00$

17. You are crocheting a triangular shawl. You start with 3 stitches and add one stitch every two rows as illustrated below.

    x x x
    x x x
    x x x x
    x x x x
    x x x x x
    x x x x x

    You are going to quit when you have a row with 153 stitches. How many rows do you have to crochet?

    a. 312
    b. 309
    c. 306
    d. 303
    e. 301

18. Simplify $\frac{(9\times10^{-7})(81\times10^{8})}{(27\times10^{15})(3\times10^{-3})}$.

a. 9×10^{-11}
b. 9×10^{11}
c. -9×10^{11}
d. -9×10^{-13}
e. 9×10^{-13}

19. What are the solutions to the equation $(x - 3)(x + 4) = 0$?

a. 1 and 7
b. -3 and -4
c. 3 and 4
d. 3 and -4
e. -3 and 4

20. Hosea, Ali, and Juan are at Hosea's house working on a school project. There is a candy bowl on the kitchen counter. When Hosea walks through the kitchen he sees the candy bowl and eats half of the candies. Then Ali comes through and eats two candies, and then Juan eats half of the remaining candies. When Hosea's Mom comes through there are only 2 candies left. If Hosea, Ali and Juan were the only people eating the candies, how many candies did Hosea eat?

a. 12
b. 11
c. 8
d. 7
e. 6

21. On the number line below, segment AB is the same length as segment BC. The coordinate of point A is $-\frac{3}{2}$. The coordinate of point B is $\frac{2}{3}$. What is the coordinate of point C?

a. 1

b. $\frac{13}{6}$

c. $\frac{11}{6}$

d. $\frac{17}{6}$

e. $\frac{7}{3}$

22. The absolute value of the difference between the solutions to the equations $5x + 2 = 12$ and $2x - 6 = 18$ is

a. 4

b. 6

c. 8

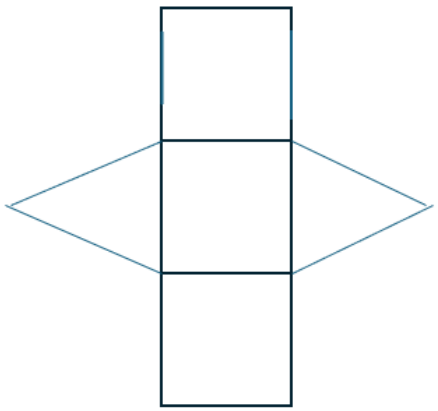
d. 10

e. 12

23. Each of two rectangular prisms has a square base with the length of a side of the base being 1 inch. One of the prisms is twice as tall as the other. The surface area of the taller prism is 8 square inches more than the surface area of the other. What is the volume of the taller prism?

a. 4 cubic inches
b. 5 cubic inches
c. 6 cubic inches
d. 8 cubic inches
e. 10 cubic inches

24. Below is a net for a three dimensional solid. Each of the 9 edges of the solid is 1 inch long. What is the name of the three dimensional solid and what is the surface area of the solid?
(The net is not drawn to scale.)



a. Rectangular prism; 4 square inches
b. Triangular prism; 4 square inches
c. Triangular prism; $3 + \frac{\sqrt{3}}{2}$ square inches
d. Triangular pyramid; 4 square inches
e. Triangular pyramid; $3 + \frac{\sqrt{3}}{2}$ square inches

25. A recipe for 60 people calls for $5\frac{2}{3}$ cups of sugar. How many cups of sugar would be needed if the recipe is scaled down to feed 45 people?

a. $4\frac{1}{4}$
b. $3\frac{1}{4}$
c. $3\frac{3}{4}$
d. $4\frac{1}{3}$
e. $4\frac{2}{3}$

26. A candle 12 inches long melts at a rate of 1.5 inches/hour. Another candle 10 inches long melts at a rate of 1 inch/hour. The candles are lit at 1:00 p.m. When will the candles be the same length?

a. 5:30 p.m.
b. 5:00 p.m.
c. 4:30 p.m.
d. 4:00 p.m.
e. 3:30 p.m.

27. A natural number y is twice a natural number x. The number y is also three times a natural number z. Which of the following cannot be the value of $x - z$?

a. 1
b. 2
c. 4
d. 6
e. Any of the above numbers can be the value of $x - z$.

28. The repeating decimal $1.\overline{003}$ written as the quotient of two integers is

a. $\frac{1{,}003{,}003{,}003}{1{,}000{,}000{,}000}$

b. $\frac{100.2}{99.9}$

c. $\frac{1{,}003{,}003{,}003{,}029}{1{,}000{,}000{,}000{,}000}$

d. $\frac{334}{333}$

e. $1.\overline{003}$ cannot be written as the quotient of two integers.

29. $\frac{1}{13} = 0.\overline{076923}$

What is the digit in the 213th place to the right of the decimal point?

a. 3

b. 2

c. 9

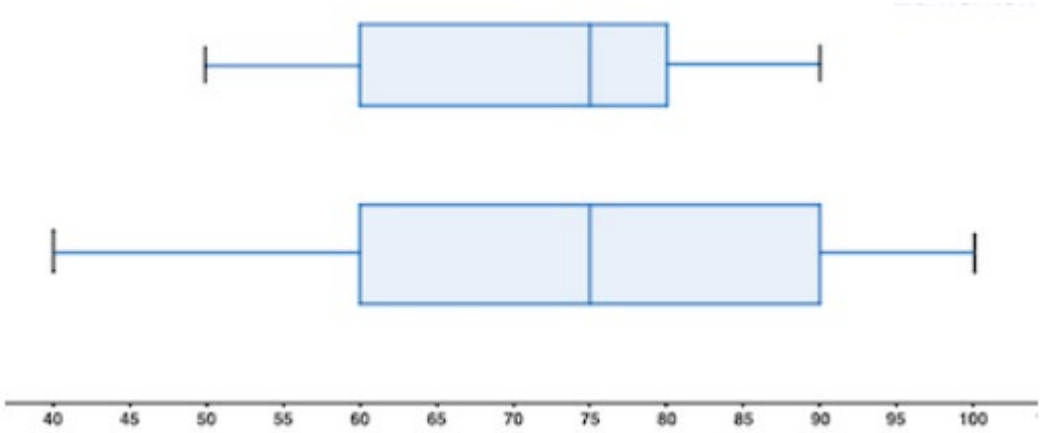
d. 6

e. 7

30. The following are box and whisker plots for the final exam scores in Mr. Teagarden's and Mr. Coffeemate's sixth grade math classes at South Middle School.

Mr. Teagarden's Class

Mr. Coffeemate's Class



Based on these plots, which of the following statements could be false?

a. The median final exam score in Mr. Teagarden's sixth grade math class is the same as the median final exam score in Mr. Coffeemate's sixth grade math class.
b. The range of final exam scores in Mr. Teagarden's sixth grade math class is less than the range of final exam scores in Mr. Coffeemate's sixth grade math class.
c. More students took the final exam in Mr. Coffeemate's sixth grade math class than in Mr. Teagarden's sixth grade math class.
d. At least one student in Mr. Coffeemate's sixth grade math class earned a higher score on the final exam than any student in Mr. Teagarden's sixth grade math class.
e. The lowest final exam score in Mr. Teagarden's sixth grade math class was higher than the lowest final exam score in Mr. Coffeemate's sixth grade math class.