

1. Carl drew two rectangles.

The larger of the two rectangles has twice the width and 4 times the length of the smaller rectangle.

The area of the larger rectangle is how many times greater than the area of the smaller rectangle?

- a. 2
- b. 4
- c. 6
- d. 8
- e. 12

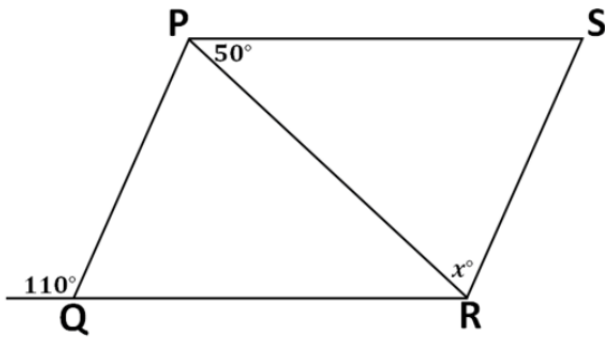
2. Ben was making clay pots

He can make 54 clay pots in 18 minutes

Working at that rate, how long will it take Ben to make 81 pots?

- a. 18 minutes
- b. 27 minutes
- c. 36 minutes
- d. 54 minutes
- e. 81 minutes

3.



In the figure above, **PQRS** is a parallelogram.

What is the degree value of x ?

- a. 40
- b. 50
- c. 60
- d. 75
- e. 80

4.



8 centimetres

The perimeter of the rectangle above is 24 centimetres.

What is the area of the rectangle?

- a. 4 square centimetres
- b. 12 square centimetres
- c. 20 square centimetres
- d. 32 square centimetres
- e. 48 square centimetres

5. What is the perimeter of a rectangular lot 16 metres long that has the same area as a rectangular lot 8 metres long and 6 metres wide?

- a. 3 metres
- b. 14 metres
- c. 19 metres
- d. 28 metres
- e. 38 metres

6. Sal and Abe both work at a supermarket, where they are responsible for cleaning shelves.

It takes Sal 12 minutes to clean one shelf while it takes Abe 10 minutes to clean one shelf.

If Sal and Abe both start cleaning shelves at exactly 3:00 PM, and start cleaning the next shelf as soon as they finish cleaning another shelf, what is the first possible time that they will finish cleaning a shelf simultaneously?

- a. 4:00 PM
- b. 4:42 PM
- c. 6:00 PM
- d. 7:00 PM
- e. 8:00 PM

7. A group of tourists plan to rent a boat together for \$900, which is to be shared equally among them.

If five, rather than eight tourists rent the boat together, how many more dollars will each tourist have to pay?

- a. \$300
- b. \$180
- c. \$135
- d. \$122.50
- e. \$67.50

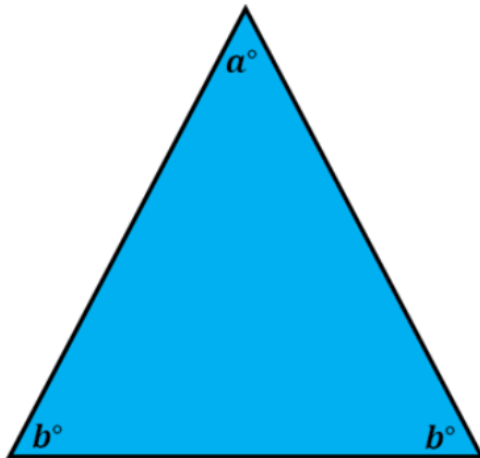
8. All the employees at ACME Corporation are either a banker or an accountant.

Eighty percent of the bankers have cars and 55 percent of the accountants have cars.

If 70 percent of all the employees have cars, what percent of all the employees are bankers?

- a. 55 percent
- b. 60 percent
- c. 65 percent
- d. 70 percent
- e. 75 percent

9.



In the figure above, if $30^\circ \leq \alpha^\circ \leq 50^\circ$, which of the following must be true about the degree value of b° ?

- a. $55^\circ \leq b^\circ \leq 65^\circ$
- b. $60^\circ \leq b^\circ \leq 70^\circ$
- c. $65^\circ \leq b^\circ \leq 75^\circ$
- d. $70^\circ \leq b^\circ \leq 80^\circ$
- e. $130^\circ \leq b^\circ \leq 150^\circ$

10. A sack contains 750 potatoes.

If the sack loses half of its total each day, what fraction of the original contents will remain in the bag after 5 days?

a. $\frac{1}{64}$

b. $\frac{1}{32}$

c. $\frac{1}{10}$

d. $\frac{5}{32}$

e. $\frac{63}{64}$

11. Fred receives 8,000 marbles that are coloured black or white only.

He gave one-fourth of the black marbles and three-fifths of the white marbles, which totals to 2,875, to his brother.

How many black marbles did Fred receive?

a. 6,000 black marbles

b. 5,500 black marbles

c. 3,500 black marbles

d. 2,500 black marbles

e. 1,800 black marbles

12. The angle of a triangle measures s , $s + 2$, and $s + 4$.

Which of the following is the degree measure of the angle s ?

- a. 58°
- b. 60°
- c. 64°
- d. 90°
- e. None of the above.

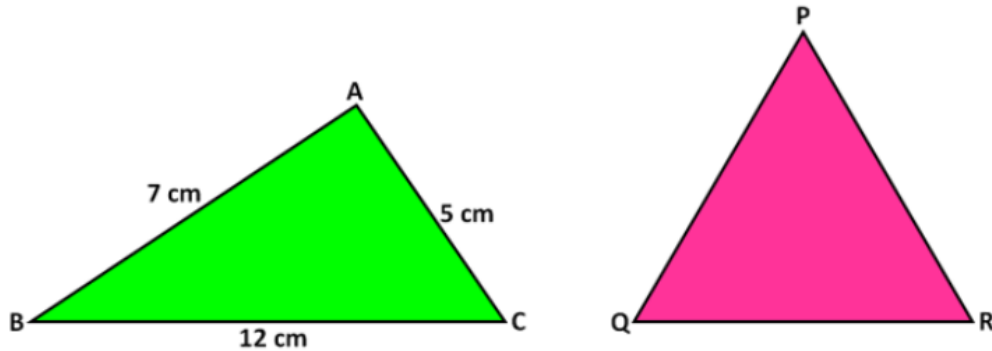
13. A list contains six consecutive even numbers.

The sum of the first four numbers in the list is 76.

What is the sum of the last four numbers in the list?

- a. 80
- b. 84
- c. 88
- d. 92
- e. 96

14.



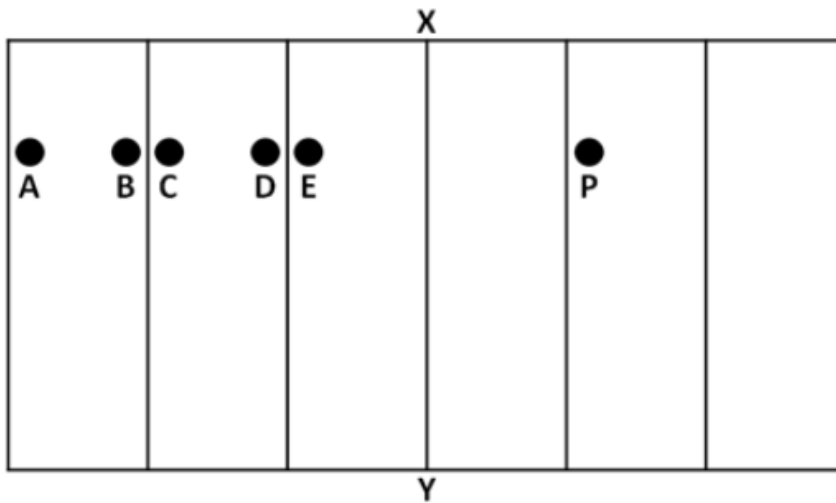
In the figures above, the perimeter of triangle **ABC** is equal to the perimeter of triangle **PQR**.

If triangle **PQR** is an equilateral triangle, what is the measure of side **PQ**?

- a. 6 centimetres

- b. 8 centimetres
- c. 10 centimetres
- d. 12 centimetres
- e. 16 centimetres

15.

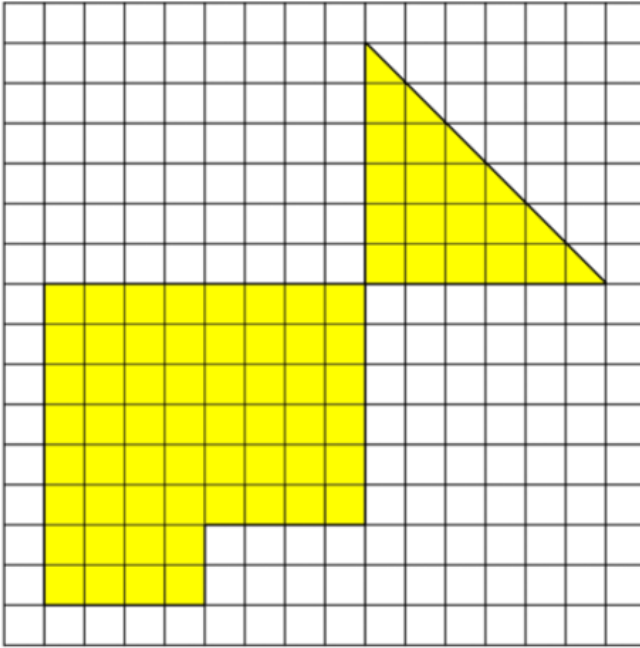


In the figure above, a strip of paper is divided into six smaller rectangles of equal size.

If the strip is folded vertically along XY, point P will most likely coincide with which point?

- a. Point A
- b. Point B
- c. Point C
- d. Point D
- e. Point E

16.



In the grid above, each small square has a side length of 1 centimetre.

What is the area of the coloured region?

- a. 56 square centimetres
 - b. 66 square centimetres
 - c. 74 square centimetres
 - d. 80 square centimetres
 - e. 96 square centimetres
17. Three friends, James, Fred, and Andrew, buy some cans of peaches, pickles, and plum.
- The price of each can of peaches is the same, the price of each can of pickles is the same, and the price of each can of plum is the same.
- James buys 3 cans of peaches, 8 cans of pickles, and 5 cans of plums for \$18.
- Fred buys 1 can of peaches, 6 cans of pickles, and 3 cans of plums for \$12.

How much will Andrew have to pay if he buys 1 can of peaches, 1 can of pickles, and 1 can of plums?

- a. \$3
- b. \$4
- c. \$5
- d. \$6
- e. \$8

18. **Train A** departs **Town P** heading for **Town Q** at 9:00 AM, and **train B** departs **Town Q** at the same time headed to **Town P** on a parallel track.

Train A travels at 80 km per hour and **train B** travels at 85 km per hour.

The distance between **Town P** and **Town Q** is 660 kilometres.

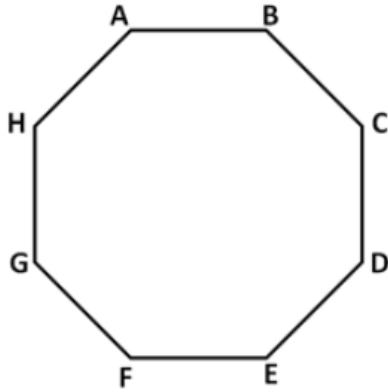
At what time will the two trains meet on the track?

- a. 12:30 PM
- b. 1:00 PM
- c. 1:20 PM
- d. 1:40 PM
- e. 2:00 PM

19. If 10 percent of a rectangular field is covered by a platform 25 metres long and 24 metres wide, what is the total area of the field?

- a. 4,000 square metres
- b. 4,800 square metres
- c. 5,000 square metres
- d. 5,400 square metres
- e. 6,000 square metres

20.



Starting at **A**, Gerry counts each vertex as he moves a chip clockwise around the inside of the octagon shown above.

Tim also starts at **A** but moves the chip in a counter-clockwise direction around the outside of the octagon.

They count consecutive vertices together in unison — 1, 2, 3, 4, 5, 6, etc.

Where will their chips be when both count 21?

- a. Both at **E**
- b. Both at **G**
- c. Gerry's chip at **D** and Tim's chip at **F**
- d. Gerry's chip at **A** and Tim's chip at **C**
- e. Gerry's chip at **B** and Tim's chip at **F**

21. Apples are only sold in bags of 5 and 8 apples per customer.

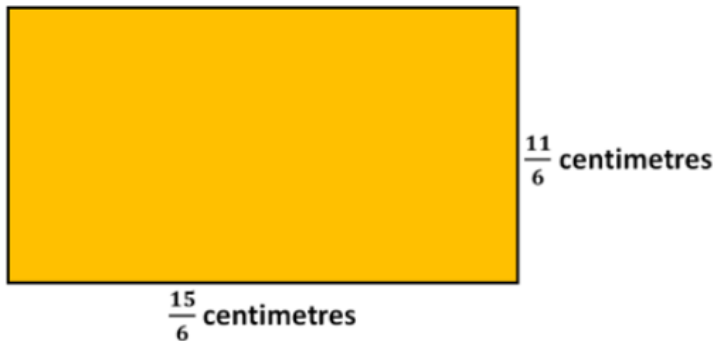
Which of the following could **NOT** be the number of apples that a customer had bought?

- a. 42 apples
- b. 38 apples
- c. 33 apples
- d. 22 apples
- e. 20 apples

22. If $52,078 + \mathbf{N}$ is a multiple of 3, which of the following could be the value of \mathbf{N} ?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 6

23.



The figure above shows the scale drawing of a rectangular lot.

If $\frac{1}{6}$ of a centimetre represents 1 metre, what is the actual area of the rectangular lot?

- a. 140 square metres
- b. 155 square metres
- c. 160 square metres
- d. 165 square metres
- e. 180 square metres

24. An ant went up the trail at an average speed of 6 centimetres per minute.

Then, the ant went down the trail on the same path at an average speed of 14 centimetres per minute.

If it took the ant exactly one minute for the entire journey, and it did not make any stops along the way, how long was the trail one way?

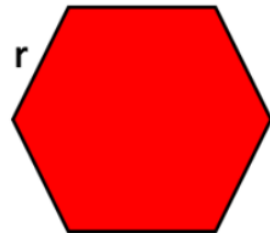
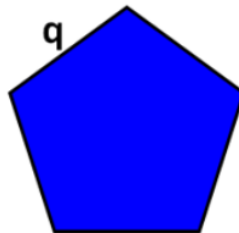
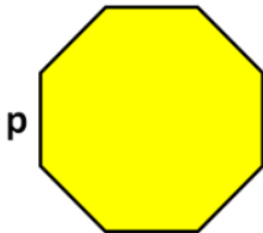
- a. 3.6 centimetres
- b. 4 centimetres
- c. 4.2 centimetres
- d. 5 centimetres
- e. 5.4 centimetres

25. The dimensions of a rectangle measure 36 centimetres by 48 centimetres.

What is the greatest number of squares, with a perimeter of 16 centimetres, into which the rectangle can be partitioned?

- a. 9 squares
- b. 12 squares
- c. 36 squares
- d. 96 squares
- e. 108 squares

26.



In the figure above, the three regular polygons have an equal perimeter.

Which of the following must be true?

- a. $p < q < r$
- b. $p < r < q$
- c. $q < r < p$
- d. $r < p < q$
- e. $q < p < r$

27. If 20 percent of the students in the class average 94 on the test, 50 percent of the students average 90 on the test, and the remaining students average 84 on the test, what is the overall average of the students in the class?

- a. 92
- b. 90
- c. 89
- d. 88
- e. 86

28. A box contains 45 balls, of which two-thirds are black.

If one-third of the black balls are removed from the box, how many balls are left in the box?

- a. 35 balls
- b. 21 balls
- c. 20 balls
- d. 11 balls
- e. 10 balls

29. Jake normally works 6.25 hours each day and earns \$5.60 per hour.

For each hour he works in excess of 6.25 hours on a given day, he is paid 1.25 times his regular rate.

How much does Jake earn for a day where he works for 10.25 hours?

- a. \$72
- b. \$63
- c. \$54
- d. \$48
- e. \$35

30. A furniture shop had a sale on chairs, $\frac{4}{5}$ of which are sold for \$64 each.

If none of the remaining 25 chairs was sold, how much did the furniture shop receive from the chairs that were sold?

- a. \$1,000
- b. \$1,600
- c. \$3,200
- d. \$4,800
- e. \$6,400

31. Sheila can make 55 bracelets per hour on days other than Fridays and twice that rate on Fridays.

If Sheila worked 50 hours last week, including 10 hours on Friday, how many bracelets did she make last week?

- a. 2,750 bracelets
- b. 3,300 bracelets
- c. 3,500 bracelets
- d. 3,850 bracelets
- e. 4,250 bracelets

32. It takes **flamethrower A** 3 hours to completely melt a block of ice while **flamethrower B** takes 2.5 hours to completely melt the same block of ice.

If Joey starts using both flamethrowers to melt the block of ice and after an hour turns off the **flamethrower A**, how much time will it take **flamethrower B** to finish melting the block of ice?

- a. 25 minutes
- b. 30 minutes
- c. 40 minutes
- d. 55 minutes
- e. 80 minutes

33. In a certain comic convention, 15 percent of the attendees are male.

At around noon, several female attendees and no male attendees left the convention and the total number of attendees remaining is 60 percent of the original number.

The number of female attendees who left the convention is what fraction of the original number of females attending the comic convention?

a. $\frac{11}{20}$

b. $\frac{9}{20}$

c. $\frac{9}{17}$

d. $\frac{8}{17}$

e. $\frac{2}{5}$

34. The harvester machine can mine 400 containers of sulphur gas in 8 minutes.

At this rate, how many containers of sulphur gas can the harvester machine mine in one hour?

a. 900 containers

b. 1,800 containers

c. 2,400 containers

d. 3,000 containers

e. 3,200 containers

35. How many two-digit positive integers are divisible by both 3 and 8?

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