11.0 MATHEMATICS

MATHEMATICS
3850311

Time: 2 hours

INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.

2. Do any necessary rough work in this booklet.

3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question booklet.

   HOW TO USE THE ANSWER SHEET

4. Use only an ordinary pencil.

5. Make sure that you have written on the answer sheet:
   > **YOUR INDEX NUMBER**
   > **YOUR NAME**
   > **NAME OF YOUR SCHOOL**

6. By drawing a **dark line** inside the correct numbered boxes mark your full Index Number (i.e. School Code Number and the three-figure Candidate's Number) in the grid near the top of the answer sheet.

7. Do not make any marks outside the boxes.

8. Keep the sheet as clean as possible and do not fold it.

9. For each of the questions 1–50 four answers are given. The answers are lettered A, B, C and D. In each case only **ONE** of the four answers is correct. Choose the correct answer.

10. On the answer sheet the correct answer is to be shown by drawing a **dark line** inside the box in which the letter you have chosen is written.

    Example
    In the Question Booklet.

    24. A company sold 2.5 tonnes of rice in 2 kg packets. How many packets were sold?
    A. 125
    B. 1250
    C. 2500
    D. 5000

    The correct answer is B (1250).

    On the answer sheet:

    | 4 | [A] | [B] | [C] | [D] | 14 | [A] | [B] | [C] | [D] | 24 | [A] | [B̶] | [C] | [D] | 34 | [A] | [B] | [C] | [D] | 44 | [A] | [B] | [C] | [D] |

    In the set of boxes numbered 24, the box with the letter B printed in it is marked.

11. Your **dark line MUST** be within the box.

12. For each question **ONLY ONE** box is to be marked in each set of four boxes.

This Question Paper consists of 16 printed pages.

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1. Which one of the following numbers is one hundred and two thousand and eight hundredths?
   A. 100200.08
   B. 102000.08
   C. 102.08
   D. 102000.80

2. What is the value of
   $45 + 3(8 - 2^2) - 7 \times 6 \div 3$?
   A. 178
   B. 51
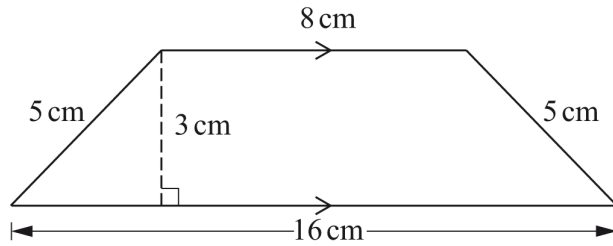   C. 49
   D. 43

3. What is the total value of digit 7 in the number 42765831?
   A. 7 000
   B. 70 000
   C. 700 000
   D. 7 000 000

4. What is the value of
   $3(0.6^2 - 0.2^2) + 2.4 \div 0.8$?
   A. 3.96
   B. 4.04
   C. 4.2
   D. 5.4

5. Which one of the ratios given below represents 60%?
   A. 3:8
   B. 3:5
   C. 5:3
   D. 5:8

6. How many days were there from 1st January to 31st March, 2012?
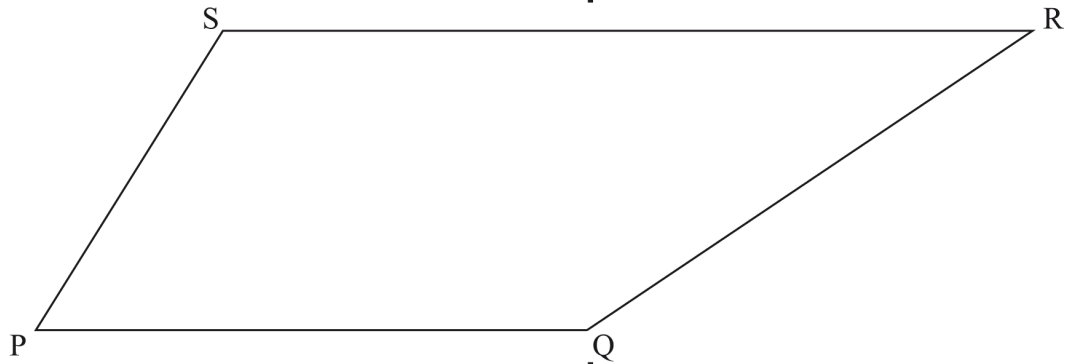   A. 89
   B. 90
   C. 91
   D. 92

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7. What is the area of the figure shown below?

8 cm

5 cm   3 cm   5 cm

16 cm

A. 24 cm²
B. 36 cm²
C. 34 cm²
D. 40 cm²

8. What is 1844.056 when rounded off to two decimal places?
A. 1844.05
B. 1844.00
C. 1844.10
D. 1844.06

9. The fractions $\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{6}$ and $\frac{4}{9}$ are to be arranged in order from the smallest to the largest. Which one of the following is the correct order?
A. $\frac{2}{3}, \frac{3}{4}, \frac{4}{9}, \frac{5}{6}$
B. $\frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{4}{9}$
C. $\frac{4}{9}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$
D. $\frac{5}{6}, \frac{3}{4}, \frac{2}{3}, \frac{4}{9}$

10. What is the difference between the L.C.M. and the H.C.F. of the numbers 18, 24 and 72?
A. 6
B. 66
C. 72
D. 78

11. What is the value of $(4\frac{1}{2} - 2\frac{1}{4} + 1\frac{1}{2} \div \frac{3}{2}) \div 2$?
A. $2\frac{1}{4}$
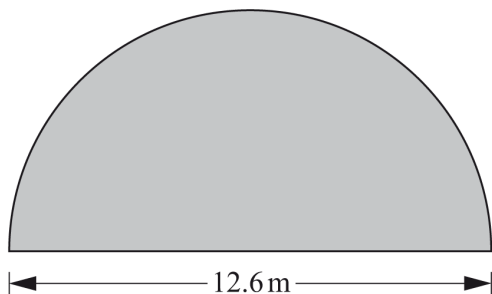B. $1\frac{1}{4}$
C. $3\frac{1}{4}$
D. $1\frac{5}{8}$

12. In the quadrilateral PQRS below, construct a perpendicular from S to meet line PQ at T. Draw a line parallel to TS passing through Q to meet line SR at V. Join TV.

What is the length of line TV in cm?
A. 2.3
B. 4.0
C. 5.0
D. 6.4

13. Wandere used $\frac{1}{8}$ of his plot of land as homestead, $\frac{1}{3}$ for flowers, $\frac{1}{4}$ for nappier grass and the remainder for vegetables. If the area for vegetables was 280 m², what was the area for flowers?
A. 120 m²
B. 240 m²
C. 320 m²
D. 960 m²

14. Beka harvested 6 bags of beans and 8 bags of maize. He sold each bag of beans at sh 4 800 and each bag of maize at sh 1 500. How much money was left after paying sh 24 500 for school fees?
A. sh 4 300
B. sh 16 300
C. sh 48 800
D. sh 65 300

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15. The figure below represents a flower garden.

| 12.6 m |

The garden is to be fenced all round using four strands of wire. What length of the wire, in metres, is required? (Take $\pi = \frac{22}{7}$)
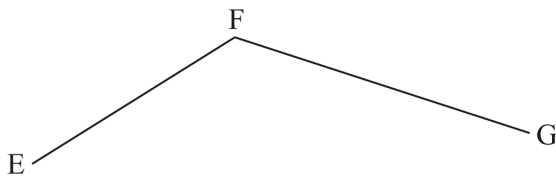A. 208.8
B. 129.6
C. 79.2
D. 32.4

16. On a certain day a shopkeeper sold 6 rulers, 15 rubbers, 24 pencils and 9 exercise books. If these items were to be represented in a pie chart, what angle would represent the number of exercise books?
A. 160°
B. 100°
C. 60°
D. 40°

17. What is the value of x in the equation $\frac{2}{3}(2x + 4) + 6 = 10$?
A. 5
B. 4
C. 2
D. 1

18. Chebet left town P at 7.00 am and travelled to town R, a distance of 320 km via town Q. She took two hours to travel from town P to town Q at an average speed of 85 km/h. After a 45 minute rest she continued with the journey at an average speed of 75km/h. At what time did she arrive at town R?
A. 11.45 am
B. 11.00 am
C. 9.45 am
D. 9.00 am

19. A lorry which carried four people of average mass 80.5 kg and also loaded with cabbages weighed 5.8 tonnes. What was the mass, in kilograms, of cabbages if the lorry weighed 3.4 tonnes when empty?
A. 2 400
B. 2 319.5
C. 2 078
D. 322

20. The table below shows the number of candidates who sat for a certain examination in the years 2008 and 2009.
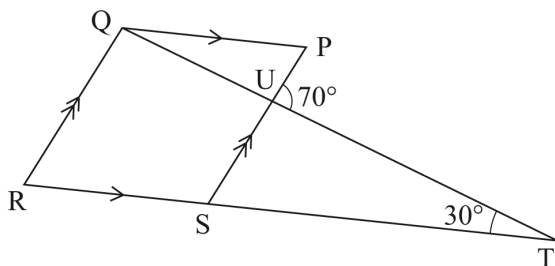
GENDER	YEAR	
	2008	2009
Girls	328 652	345 454
Boys	367 125	381 600

How many more candidates sat for the examination in 2009 than in 2008?
A. 74 619
B. 31 277
C. 16 802
D. 14 475

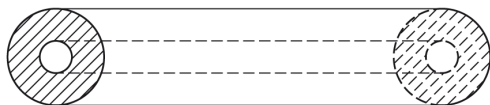**21.** What is the size of the obtuse angle EFG drawn below?

A. 50°
B. 130°
C. 133°
D. 230°

22. What is the value of $\sqrt{\dfrac{9+16}{(100-36)}}$?

A. $\frac{5}{64}$
B. $\frac{5}{8}$
C. $1\frac{3}{4}$
D. $3\frac{1}{8}$

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23. Figure PQRS shown below is a parallelogram. Line RST is a straight line. Angle STU = 30° and angle TUP = 70°.
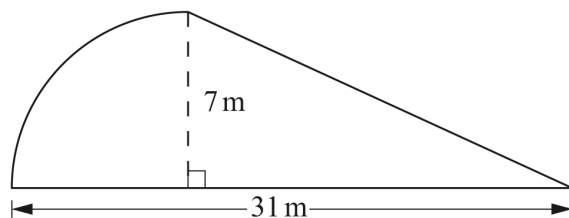

What is the size of angle TQR?
A. 140°
B. 110°
C. 40°
D. 30°

24. A salesman is paid a monthly salary of sh 6 000 and a 5% commission on goods he sells above sh 20 000 each month. In a certain month the salesman earned sh 13 000. How much money was the sales of the goods that month?
A. sh 120 000
B. sh 140 000
C. sh 160 000
D. sh 280 000

25. The diagram below represents a cylindrical solid of diameter 56 cm. The solid has a circular hole of radius 7 cm. The length of the solid is 120 cm.

What is the volume of the solid?
(Take $\pi = \frac{22}{7}$)
A. 18 480 cm³
B. 295 680 cm³
C. 314 160 cm³
D. 277 200 cm³

26. In a game park tourists saw giraffes, elephants and lions. The number of lions seen was n. The number of elephants seen was three times the number of lions. The number of elephants seen was six less than that of giraffes. How many animals altogether did the tourists see in the park?
A. $7n + 6$
B. $3n + 12$
C. $7n - 6$
D. $n + 9$

27. The figure below represents a flower garden in the shape of a quarter of a circle of radius 7 m and a right angled triangle.
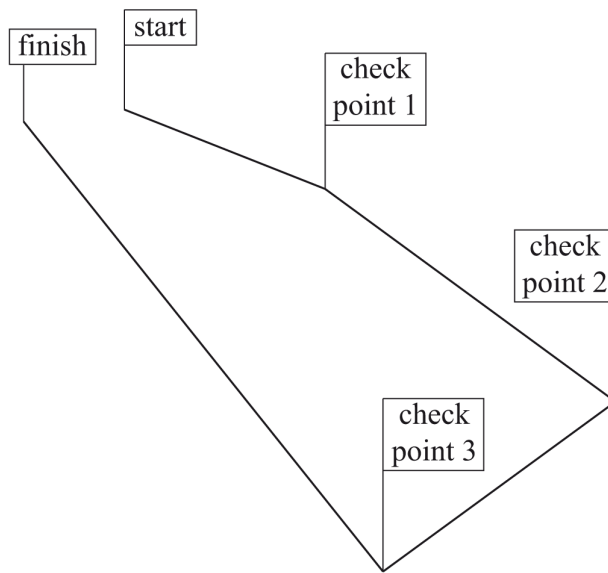

What is the area of the flower garden?

(Take $\pi = \frac{22}{7}$)

A. $95\,\text{m}^2$

B. $108\frac{1}{2}\,\text{m}^2$

C. $122\frac{1}{2}\,\text{m}^2$

D. $147\,\text{m}^2$

28. Khalifa bought 5 trays of eggs @ sh 200. All eggs in one of the trays broke and he sold the remaining trays @ sh 210. What percentage loss did he make?

A. 5%

B. 84%

C. $19\frac{1}{21}\%$

D. 16%

29. Six men working at the same rate, can complete digging a shamba in 8 days. How many days will it take 4 of the men to complete the same work?

A. 12

B. $5\frac{1}{3}$

C. 4

D. 3

30. Mwongeli receives a salary of sh 15 000 per month. In a certain month she spent 0.2 of the salary on rent, 0.3 on food and 0.1 on transport. She spent 0.25 of the remainder on school fees and saved the rest.
How much money did she save in that month?

A. sh 4 500

B. sh 3 750

C. sh 2 250

D. sh 1 500

31. The figure below shows a scale drawing for a route of a map for a bicycle race. The scale used is 1:200 000.

Atieno was in the bicycle race. Her bicycle broke down at check point 2 and had to retire from the race. How many kilometers was she away from the finish point when she retired?

A. 40 km

B. 16 km

C. 24 km

D. 10 km

32. Sangale left home at 2330 h on Monday for a journey which took $2\frac{1}{4}$ days to complete.

On what day and time in am/pm system did he complete the journey?

A. Thursday 5.30 am

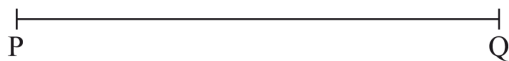B. Wednesday 5.30 am

C. Thursday 11.30 pm

D. Wednesday 11.30 pm

33. The table below shows price of food for a certain hotel.
Table showing price of food in shillings

	Ugali	*Mchele*	*Chips*
Nyama	150	180	200
Samaki	160	170	210
Kuku	240	180	250

A team of eleven people took lunch in the hotel as follows: 4 took *mchele* and *nyama*; 3 took *chips* and *kuku*; 2 took *ugali* and *samaki*; and the rest took *ugali* and *kuku*. How much more money would the team have paid if they had all taken *chips* and *kuku*?

A. sh 480
B. sh 600
C. sh 2 270
D. sh 2 250

34. On line PQ drawn below, construct a triangle NPQ such that angle NPQ = 30° and line PN = 10 cm. Bisect angle PQN and draw the bisector to meet PN at R.

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 ├─────────────────────────────────────────┤
 P                                          Q
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What is the size of angle NRQ?
A. 95°
B. 85°
C. 57°
D. 43°

35. The cash price of a cupboard is sh 3 000. An interest of 25% is charged if the cupboard is bought on hire purchase terms. Amina bought the cupboard on hire purchase terms. She paid a deposit and twelve equal installments. Each installment was sh 262.50.

How much deposit did she pay?

A. sh 3 750
B. sh 750
C. sh 600
D. sh 150

36. The table below shows a timetable for a certain airline plying Nairobi-Kisumu-Mombasa route.

From	To	Flight No.	Departure	Arrival
Nairobi	Mombasa	209	0825 h	0900 h
Mombasa	Nairobi	210	1430 h	1500 h
Nairobi	Kisumu	211	1645 h	1730 h
Kisumu	Nairobi	212	1845 h	1930 h

What is the difference between the time taken by flight No. 212 to fly between Kisumu and Nairobi, and flight No. 210 to fly between Mombasa and Nairobi?

A. 15 min
B. 30 min
C. 45 min
D. 75 min

37. What is the value of $\dfrac{2a+b}{c}$ when c = 4, b = 2 c + 1 and a = b +2?

A. 3
B. $4\frac{3}{4}$
C. 7
D. $7\frac{3}{4}$

38. A cylindrical water tank has a diameter of 1.4 m and a height of 4 m. How many litres of water will it hold when full?
(Take $\pi = \frac{22}{7}$)

A. 6.16
B. 61.6
C. 616
D. 6160

39. The mean of the following marks for pupils in a certain class is 72.

66, 86, 63, 80, x, 79, 69, 85, 63, 88

What is the median mark?
A. 74
B. 70
C. 63
D. 41

40. A trader deposited sh 20 000 in a bank. The money was in the following denominations:
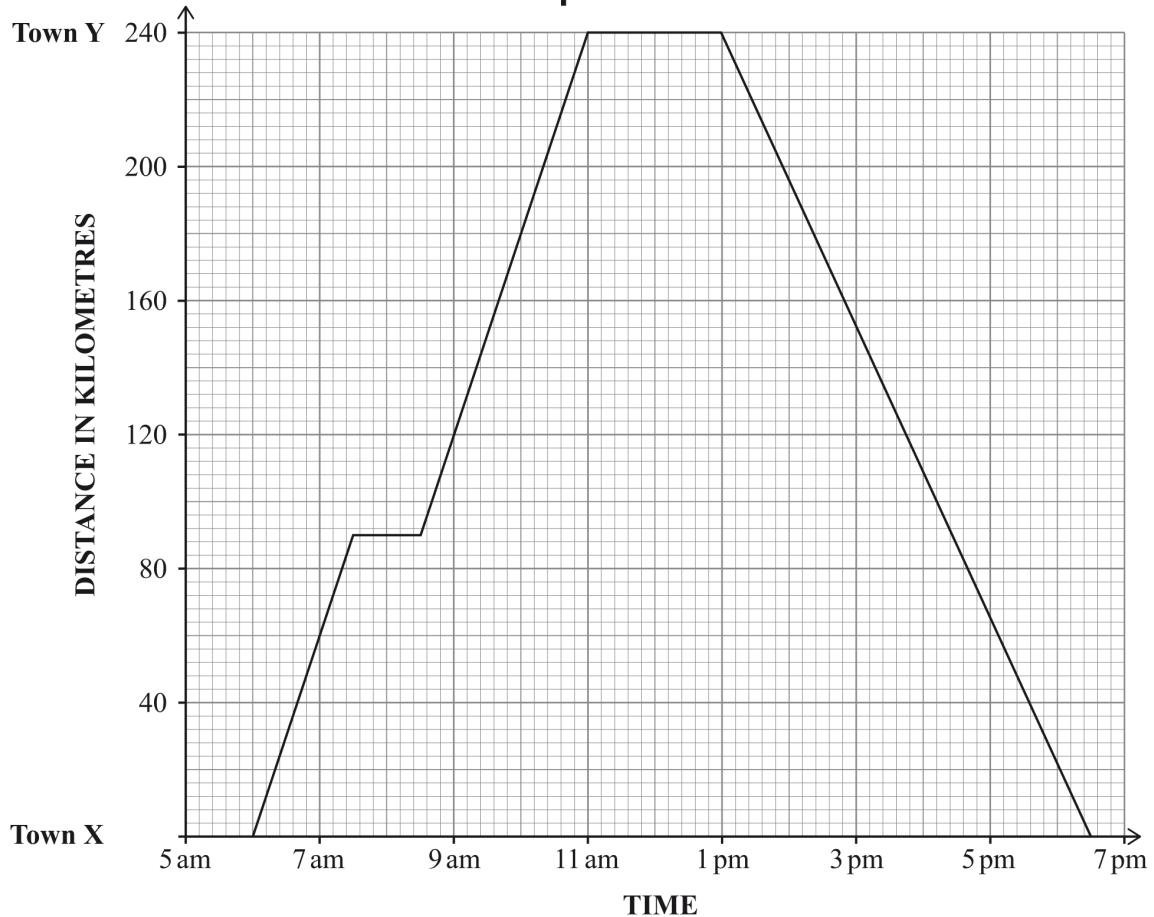
sh 1000   –   5 notes
sh 500   –   15 notes
sh 200   –   24 notes

The remaining amount was in 100 shillings and 50 shillings notes. The 100 shillings and 50 shillings notes were equal in number. How much money did the trader deposit in 50 shillings notes?
A. sh 2 700
B. sh 1 800
C. sh 1 350
D. sh 900

41. A cylindrical container has a radius of 6.3 cm and is 15 cm high. Its curved surface is completely covered with a label. What is the area of the label in cm²?
(Take $\pi = \frac{22}{7}$)
A. 297.00
B. 594.00
C. 843.48
D. 1871.10

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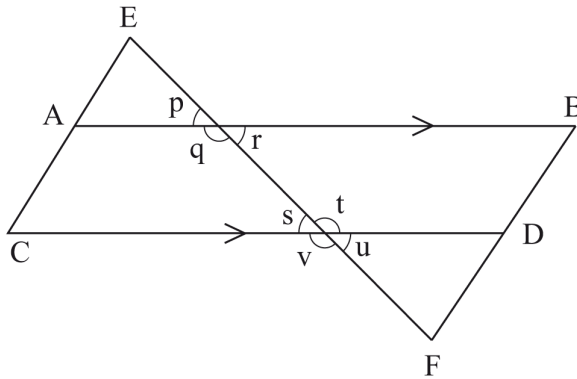**42.** The graph below shows a journey by bus from town X to town Y and back.
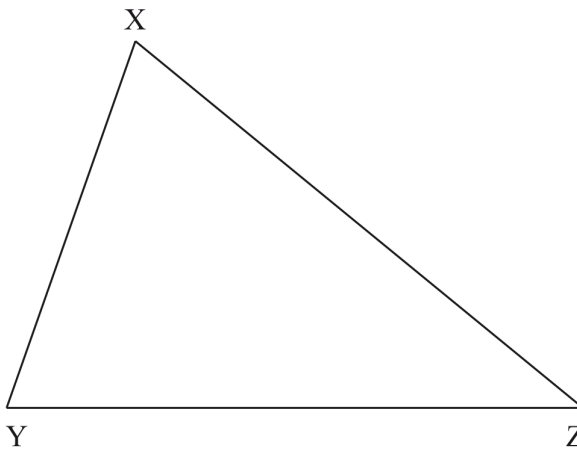
What was the average speed of the bus for the whole journey?
A. 38.40 km/h
B. 19.20 km/h
C. 50.53 km/h
D. 40.00 km/h

43. Wanja deposited sh 24 600 in a certain financial institution which paid simple interest per annum. After 9 months the total amount of money plus interest earned was sh 25 338. At what rate per cent did the money earn interest?
A. 4%
B. 3%
C. $2\frac{1}{4}$%
D. $\frac{1}{3}$%

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44. In the figure shown below, line AB is parallel to line CD. Lines EC, EF and BF are transversals.
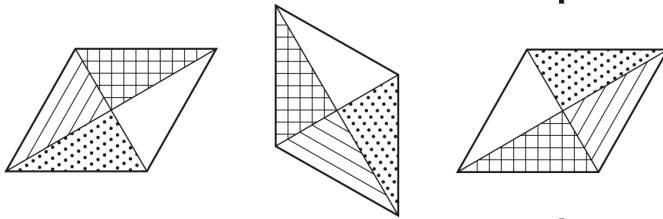
Which one of the statements below is correct?
A. $q + s = 180°$
B. $p + r = t + v$
C. $v + u = s + r$
D. $q + t = 180°$

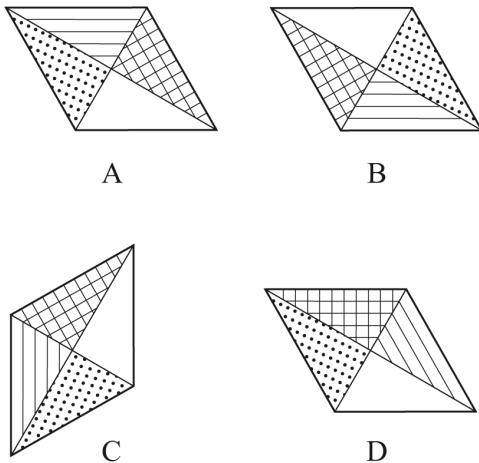**45.** Construct a circle that touches the three sides of triangle XYZ given below.

What is the diameter of the circle?
A. 8.6 cm
B. 4.3 cm
C. 3.8 cm
D. 1.9 cm

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46. The perimeter of a triangle is 32 cm. Two sides of the triangle measure 10 cm and 12 cm. What is the area of the triangle?

A. 24

B. 40

C. 48

D. 50

47. The price of an article in a shop was increased by 10%. The following month the price was decreased by 20%. The price of the article after the decrease was sh 79 200.

What was the original price before the increase?

A. sh 72 000

B. sh 88 000

C. sh 90 000

D. sh 99 000

48. The figure below shows a pattern of shapes.

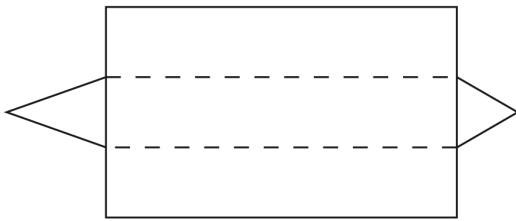Which one of the following shapes is the next in the pattern?

A

B

C

D

49. The following are lengths of sides of different triangles:

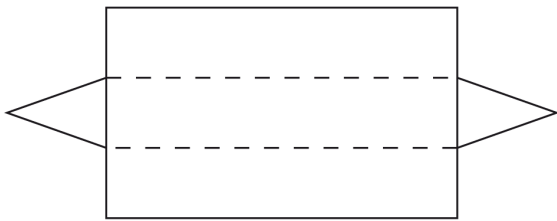|			
(i)	*5, 12, 13*	*(ii)*	*7, 24, 25*
(iii)	*5, 11, 13*	*(iv)*	*3, 4, 5*

Which one of the choices below contains all right angled triangles?

A. *(i), (ii), (iii)*
B. *(i), (iii), (iv)*
C. *(ii), (iii), (iv)*
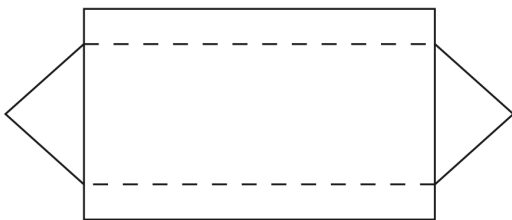D. *(i), (ii), (iv)*

50. Which one of the following figures is the net of a triangular prism?

A

B

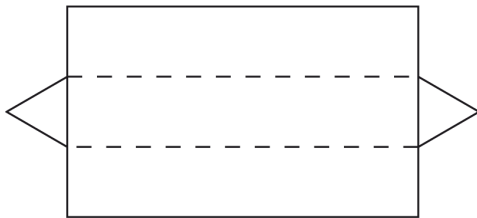

C

D