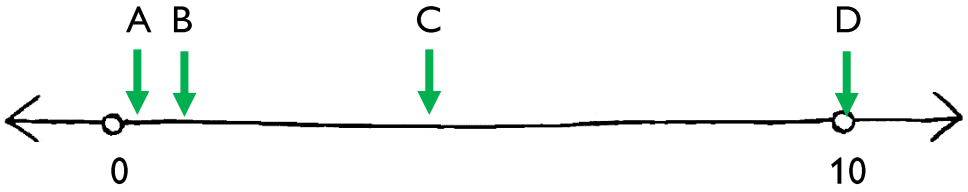
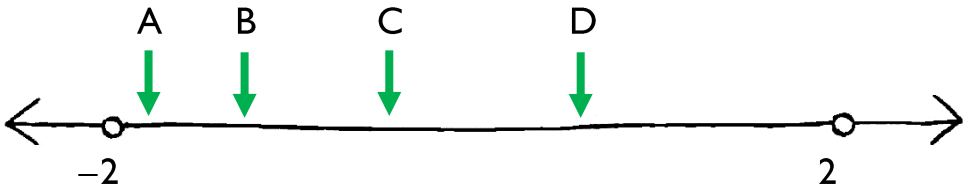
- Complete all answers on lined paper. Please make sure that you write your name on your answer paper and number the questions correctly. There is a diagram sheet at the end of this test to answer questions 17 and 20. Please write your name on it and hand it in with your answer paper.
- Calculators may not be used.

1. Which arrow (A, B, C or D) best represents 0,1 on the number line?



(1)

2. Which arrow (A, B, C or D) best represents $-\frac{1}{3}$ on the number line?



(1)

3. Which number is the largest: 0,54; 0,054; or 0,405? (1)

4. Calculate. *Show your working where appropriate.*

a) $30 - 20 \div 2 + 4$ (1)

b) $2\,214 \div 18$ (2)

c) $-5 - (-8)$ (1)

d) 20% of R3 500 (2)

e) $\frac{5}{8} - \frac{1}{6}$ (2)

f) $\frac{3}{5} \times \frac{1}{10}$ (1)

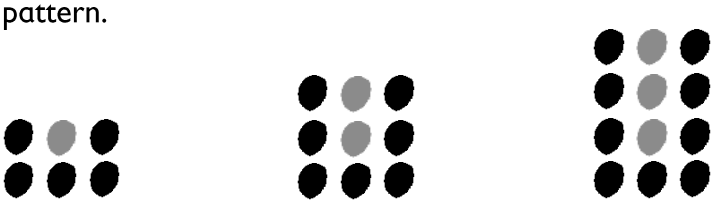
5. Determine the missing value to make this statement true.

$7 - (_____) = \frac{1}{2}$ of 18 (1)

6. Calculate. *Show your working.*

$2 - 1 + 3 - 2 + 4 - 3 + 5 - 4 + 6 - 5 + \ldots + 101 - 100$ (2)

7. Mbali makes pictures with dots like this. The first three pictures make a pattern.



Picture 1 Picture 2 Picture 3

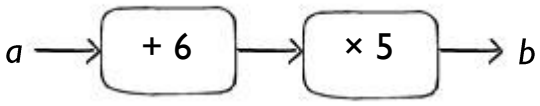
a) Determine the number of black dots in Picture 5. (1)

b) Determine the number of black dots in Picture 25. *Show your working.* (2)

c) Determine the number of grey dots in the picture with exactly 85 black dots. *Show your working.* (2)

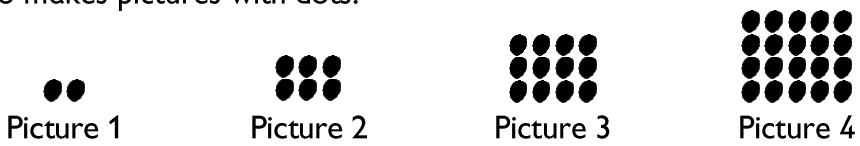
d) Which picture number will have exactly 103 black dots? *Show your working.* (2)

8. Write a formula that is equivalent to the flow diagram.



(2)

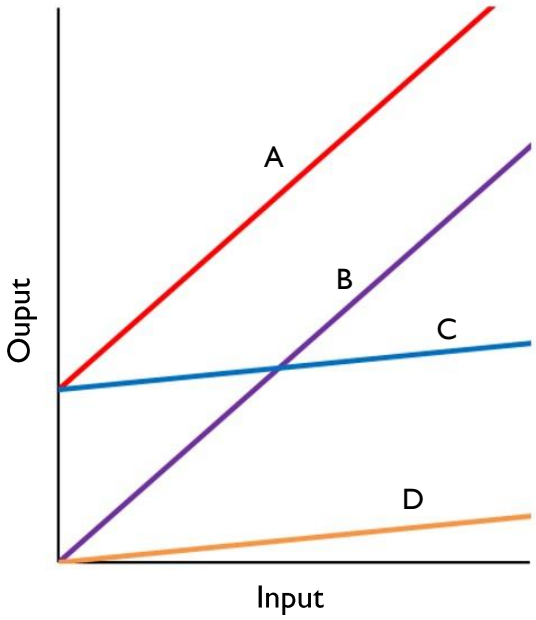
9. Sipho makes pictures with dots.



Write a formula that can be used to calculate the number of dots in any picture. Use the variable *m* to represent the number of dots and the variable *n* to represent the picture number. (2)

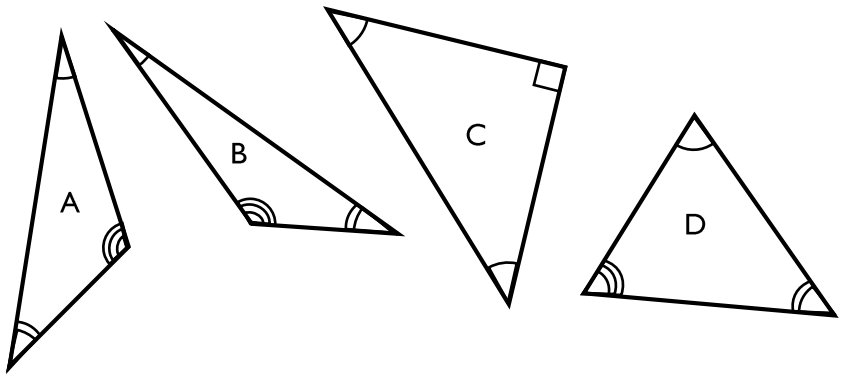
10. Match each function to the graph that represents the function. For example, a) C:

a) output = $\frac{1}{2}$ × input + 3
b) output = $\frac{1}{2}$ × input
c) output = 2 × input
d) output =2 × input + 3



(2)

11. Study triangles A to D.



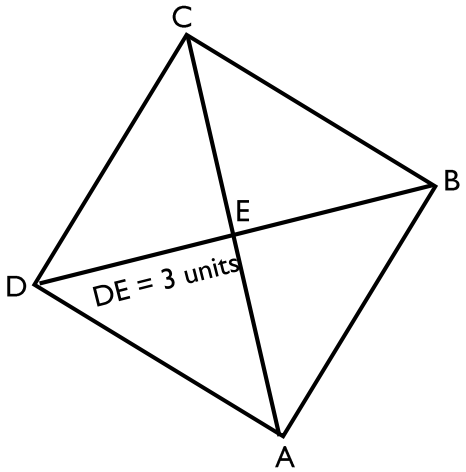
Which triangle(s) is/are acute-angled triangle(s)? (1)

12. Is the following statement always true, sometimes true or never true?

"An equilateral triangle is also an isosceles triangle." (1)

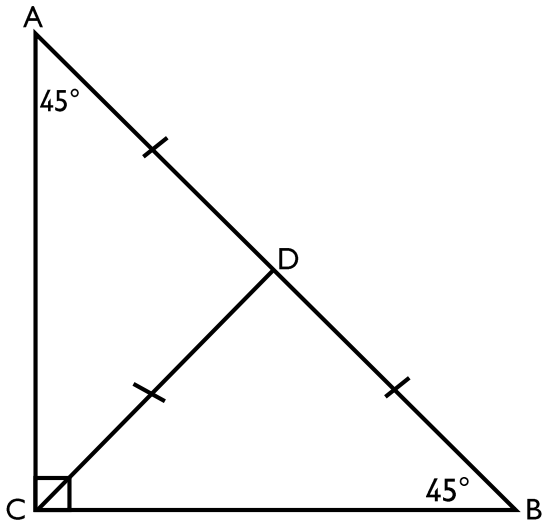
13. ABCD is a square with diagonals AC and BD intersecting at E.
DE = 3 units.

What is the length of EB?



(1)

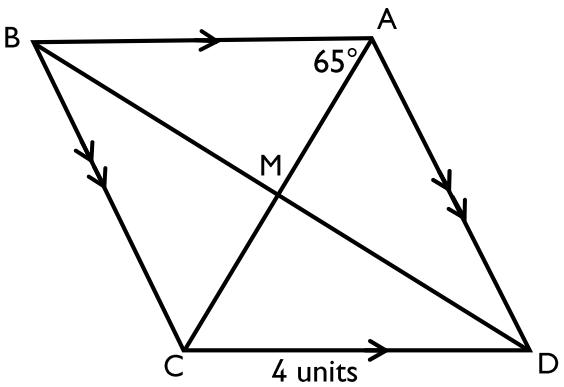
14. Consider ΔABC with D on AB and $\widehat{C}$ = 90°.
AD = CD = BD and
$D\widehat{B}C$ = 45°.



a) What type of triangle is ΔABC? (1)

b) What is the size of $D\widehat{C}B$? (1)

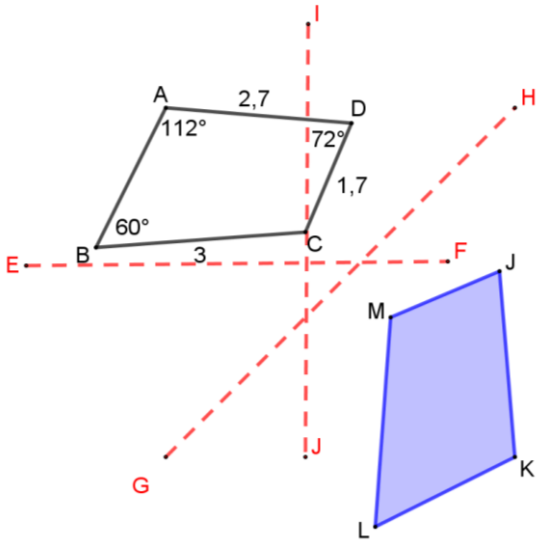
15. ABCD is a rhombus with
$B\widehat{A}C$ = 65° and
CD = 4 units.



a) Determine the size of $B\widehat{A}D$. (1)

b) Determine the length of AB. (1)

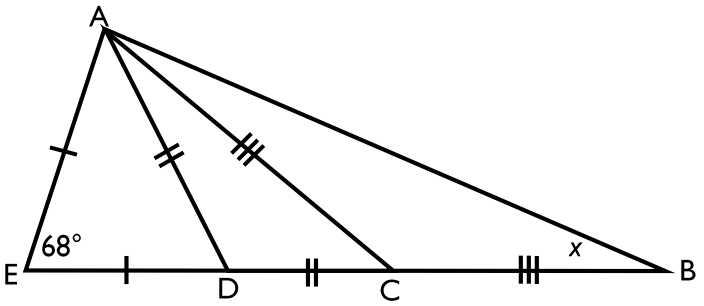
16. JKLM is the image of ABCD after a reflection.



a) Which line segment (IJ, EF or GH) was ABCD reflected about to create this image? (1)

b) What is the size of angle $J\hat{K}L$? (1)

17. In the diagram,
AE = ED,
AD = DC,
AC = CB and
$A\hat{E}D = 68°$.

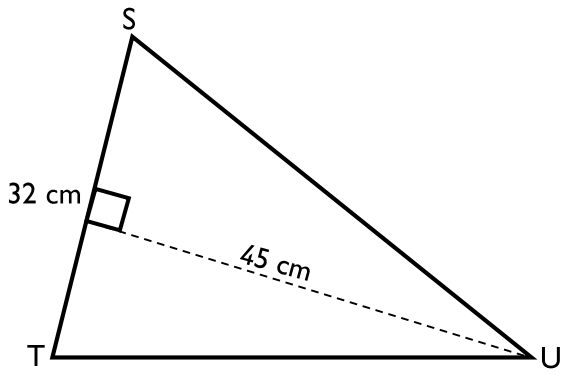


Determine the value of *x*. *Show your working on the diagram sheet.* (3)

18. Write the number that makes the sides equal.

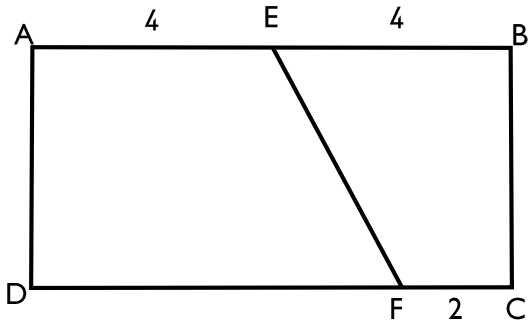
1 cubic centimetre = _____ millilitre (1)

19. Determine the area of ΔSTU. *Show your working*



(2)

20. The area of ABCD is 48 square units. Determine the area of EBCF. *Show your working on the diagram sheet.*



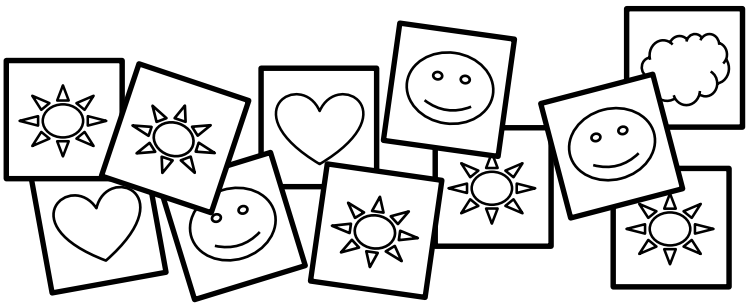
(2)

21. The mass of eight girls is given in kilograms.

30	42	42	47	49	52	58	64

Determine the mode and median mass of the girls. (2)

22. The cards are shuffled and one card is drawn at random.

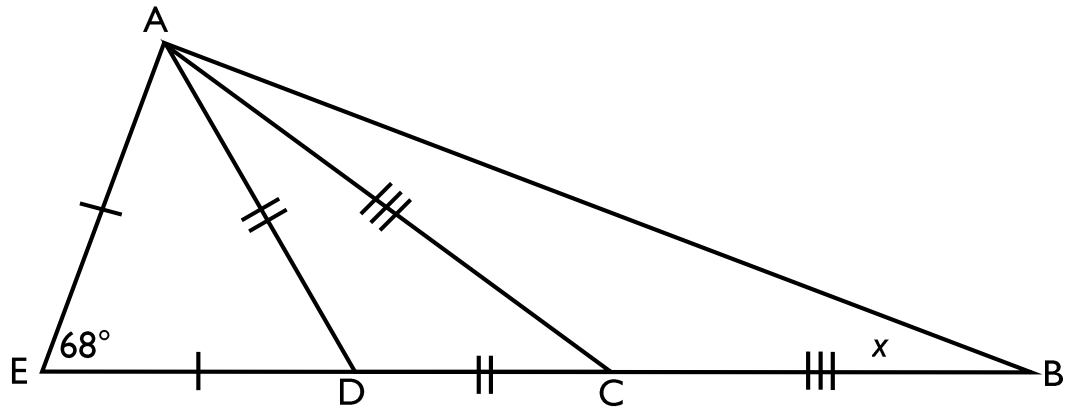
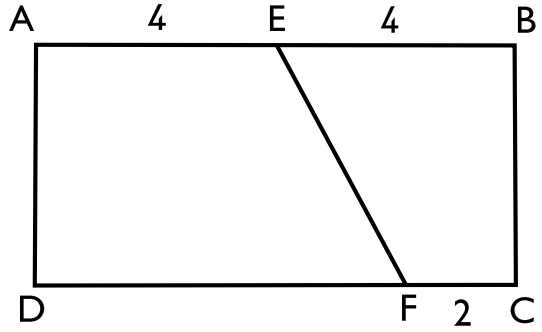


Determine the probability that the card taken has a sun on it. (2)

23. The average of eleven numbers is 8. If a twelfth number is added to these numbers, the average of all twelve numbers is now 11. Determine the 12th number. *Show your working.* (2)

Diagram Sheet Name: _____

Question 17



Question 20