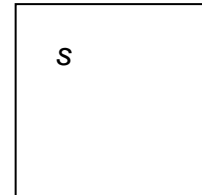Supplementary Questions From The Westpac Australian Mathematics Competition

Relevant Stimulus Material
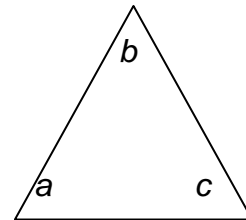The following information will be of use in some of the questions.

Square: Area and perimeter.

The area of a square is the length of the side multiplied by
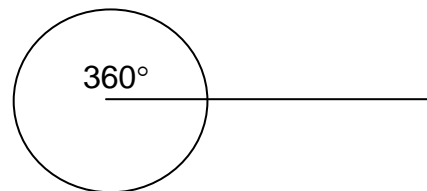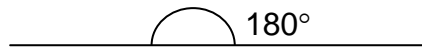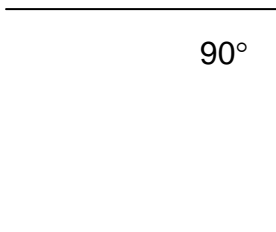Itself, and the perimeter is 4 times the length of the side.

The angles in a triangle always add up to 180°.

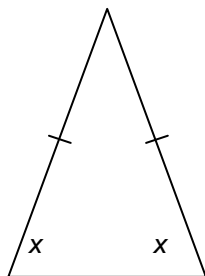$a+b+c=180°$

There are 90° in a right angle, 180° in a straight line and 360° in a full circle.
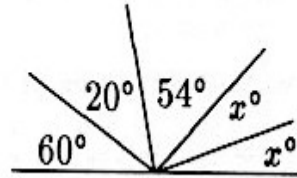
Sides marked with dashes are of equal length. A triangle with two equal sides has equal angles at the bases of those sides.

9. In the diagram x equals

(A) 34   (B) 33   (C) 46

(D) 67   (E) 23

19. A normal duck has two legs. A lame duck has one leg. A sitting duck has no legs. There are 33 ducks with a total of 32 legs. The total number of normal ducks and lame ducks is twice the number of sitting ducks. The number of lame ducks is
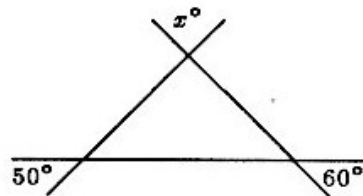
(A) 9   (B) 10   (C) 11   (D) 12   (E) 13

7. The area of a square is 25 square centimetres. Its perimeter, in centimetres, is
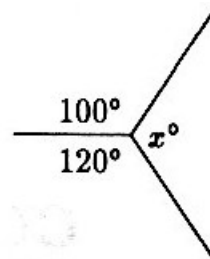
(A) 16   (B) 15   (C) 20   (D) 10   (E) 25

8. In the diagram, x equals

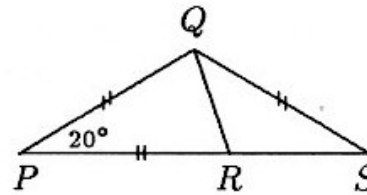(A) 50   (B) 60   (C) 70   (D) 110   (E) 65

2. In the diagram x equals

(A) 100   (B) 110   (C) 120

(D) 130   (E) 140

14. In the diagram $PQ = PR = QS$ and $\angle QPR = 20°$. The size of $\angle RQS$, in degrees, is
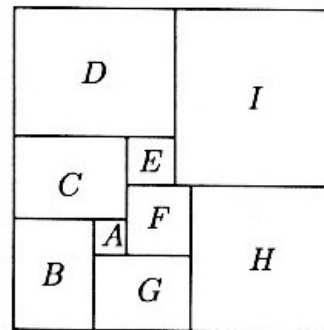

(A) 20   (B) 40   (C) 60   (D) 80   (E) 100

15. The average of four numbers is 48. If 8 is subtracted from each number the average of the four new numbers is
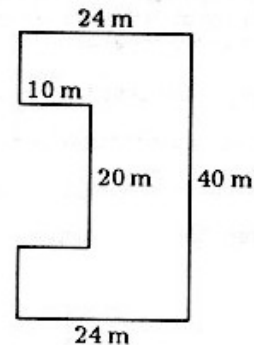
(A) 16   (B) 40   (C) 46   (D) 44   (E) 6

22. Nine squares are arranged as shown. If square A has area $1\,\text{cm}^2$ and square B has area $81\,\text{cm}^2$ then the area, in square centimetres, of square I is

(A) 196   (B) 256   (C) 289

(D) 324   (E) 361

13. Lawn food is to be applied to a lawn at the rate of $2.5\,\text{kg}$ per $100\,\text{m}^2$. The lawn has dimensions as shown in the diagram, and all angles are right angles. The amount of lawn food needed, in kilograms, is
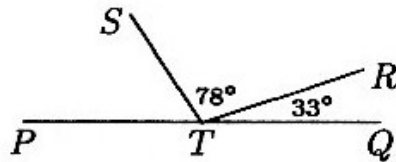
(A) 18   (B) 19   (C) 20

(D) 22   (E) 24

4. The next two whole numbers greater than 10 009 are

(A) 10 010 and 10 011   (B) 10 007 and 10 008

(C) 10 100 and 10 101   (D) 10 101 and 10 102

(E) 11 000 and 11 001

5. PQ is a straight line. The size of angle STP, in degrees, is

(A) 249   (B) 101   (C) 111   (D) 69   (E) 89