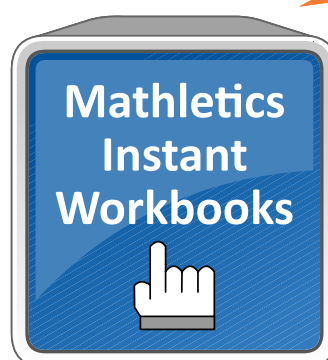
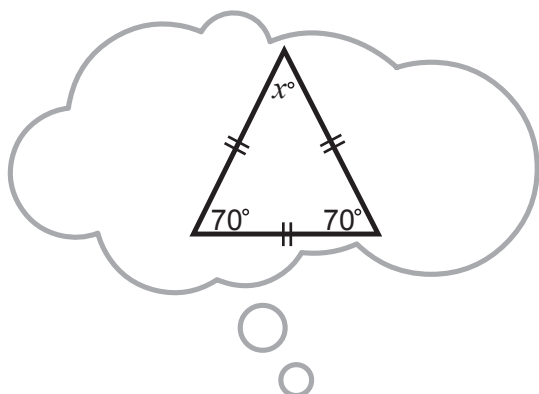


MATHLETICS

Reasoning in Geometry

Teacher Book - Series I-1



Reasoning in geometry

Topic Test

PART A

Instructions

This part consists of 12 multiple-choice questions

Each question is worth 1 mark

Fill in only ONE CIRCLE for each question

Calculators are NOT allowed

Time allowed: 15 minutes

Total marks = 12

					Marks	
1	The angle sum of a triangle is always equal to	(A) 90°	(B) 180°	(C) 270°	(D) 360°	1
2	The angle sum of a quadrilateral is always equal to	(A) 90°	(B) 180°	(C) 270°	(D) 360°	1
3	If two angles of a triangle are complementary then the third angle is	(A) acute	(B) right angle	(C) obtuse	(D) none of these	1
4	If two angles of a triangle are 30° and 40° then the third angle is equal to	(A) 20°	(B) 110°	(C) 200°	(D) 290°	1
5	In any right angled triangle the other two angles are both	(A) acute	(B) obtuse	(C) right angles	(D) none of these	1
6	The size of each angle of an equilateral triangle is	(A) 30°	(B) 60°	(C) 90°	(D) 45°	1
7	In a right angled triangle if one acute angle is 35°, the size of the other acute angle is	(A) 25°	(B) 35°	(C) 45°	(D) 55°	1
8	The size of each of the base angles of a right angled isosceles triangle is	(A) 45°	(B) 60°	(C) 90°	(D) 120°	1
9	If two angles of a triangle are each 45° then the third angle is	(A) 30°	(B) 90°	(C) 60°	(D) 80°	1
10	If the vertex angle of an isosceles triangle is 58°, the size of each base angle is	(A) 16°	(B) 61°	(C) 106°	(D) 151°	1
11	In a triangle, the number of right angles can be	(A) 1	(B) 2	(C) 3	(D) none of these	1
12	In a triangle if one angle is obtuse then the other two angles are	(A) acute	(B) obtuse	(C) right angle	(D) reflex	1

Total marks achieved for PART A

12

Reasoning in geometry

Topic Test

PART B

Instructions

This part consists of 15 questions

Each question is worth 1 mark

Write answers in the answers-only column

Time allowed: 20 minutes

Total marks = 15

Questions			Answers only	Marks			
Find the value of the pronumerals in the following.			1 _____	1			
1		2		3		2 _____	1
4		5		6		3 _____	1
7		8		9		4 _____	1
10		11		12		5 _____	1
13		14		15		6 _____	1
			7 _____	1			
			8 _____	1			
			9 _____	1			
			10 _____	1			
			11 _____	1			
			12 _____	1			
			13 _____	1			
			14 _____	1			
			15 _____	1			

Total marks achieved for PART B

15

Answers – Reasoning in geometry

PAGE 1 1 a 90° b 90° c 90° and 180° d 90° e 180° f equal g 360° h equal i equal j 180° 2 a 180° b equal c 60° d sum e two f all three 3 a 360° b parallel c right d equal e equal f equal, equal

PAGE 2 1 a $x = 50^\circ$ b $m = 110^\circ$ c $x = 50^\circ, y = 130^\circ$ d $x = 120^\circ$ e $x = 60^\circ$ f $x = 40^\circ$ 2 a $x = 100^\circ$ b $a = 35^\circ$ c $x = 30^\circ$ d $y = 40^\circ$ e $a = 60^\circ$ f $a = 85^\circ, b = c = 95^\circ$ 3 a $x = 60^\circ$ b $x = 55^\circ, y = 35^\circ$ c $x = 90^\circ$

PAGE 3 1 a $x = 70^\circ$ b $x = 120^\circ$ c $x = 110^\circ$ 2 a $x = 100^\circ, y = 80^\circ$ b $x = 75^\circ, y = 105^\circ$ c $x = 70^\circ, y = 110^\circ$ d $x = 135^\circ, y = 45^\circ$ e $x = 115^\circ, y = 115^\circ$ f $x = 110^\circ, y = 70^\circ$ 3 a $x = 72^\circ$ b $a = 50^\circ, b = 50^\circ$ c $a = b = c = 65^\circ$ d $x = 90^\circ$ e $x = 100^\circ$ f $a = 90^\circ$

PAGE 4 a $x = 30^\circ$ b $x = 40^\circ$ c $a = 60^\circ$ d $m = 60^\circ$ e $x = 20^\circ$ f $y = 55^\circ$ 2 a $x = 80^\circ$ b $x = 118^\circ$ c $a = 40^\circ$ d $a = 76^\circ$ e $x = 45^\circ$ f $a = 80^\circ$ 3 a $a = 30^\circ, b = 60^\circ$ b $x = 30^\circ, y = 125^\circ$ c $m = 50^\circ, n = 55^\circ$

PAGE 5 1 a $x = 110^\circ$ b $m = 45^\circ$ c $a = 70^\circ$ d $x = 30^\circ$ e $x = 70^\circ, y = 110^\circ$ f $x = z = 110^\circ, y = 70^\circ$ 2 a $a = 140^\circ$ b $m = 55^\circ$ c $x = 47^\circ$ d $x = 95^\circ, y = 70^\circ$ e $x = 58^\circ, f a = 85^\circ, y = 65^\circ$ 3 a $a = 60^\circ, x = 110^\circ, y = 70^\circ$ b $a = 75^\circ, x = 70^\circ$ c $x = 20^\circ, y = 170^\circ, a = 5^\circ$

PAGE 6 1 a $a = 50^\circ, y = 40^\circ, x = z = 90^\circ$ b $a = 50^\circ, b = 50^\circ, c = 130^\circ$ c $a = 40^\circ, b = 40^\circ$ d $x = 150^\circ$ e $a = 45^\circ$ f $x = 65^\circ, y = 60^\circ, z = 55^\circ$ 2 a $a = 25^\circ, b = 80^\circ$ b $p = 95^\circ, n = 80^\circ, m = 95^\circ$ c $a = 35^\circ$ d $y = 50^\circ$ e $c = 40^\circ, a = 80^\circ, b = 60^\circ$ f $a = 30^\circ, b = 35^\circ$

3 a $a = b = d = 60^\circ, c = e = 120^\circ$ b $x = 30^\circ$ c $a = 65^\circ, b = 115^\circ, d = 45^\circ, c = 20^\circ$

PAGE 7 Answers will vary.

PAGE 8 1 35° 2 45° 3 $30^\circ, 60^\circ$ 4 $30^\circ, 60^\circ, 90^\circ$ 5 13 cm 6 55° 7 60° 8 44° 9 47° 10 60°

PAGE 9 1 B 2 D 3 B 4 B 5 A 6 B 7 D 8 A 9 B 10 B 11 A 12 A

PAGE 10 1 $x = 47^\circ$ 2 $a = 65^\circ$ 3 $m = 80^\circ$ 4 $a = 65^\circ$ 5 $x = 70^\circ$ 6 $n = 30^\circ$ 7 $a = 70^\circ, b = 110^\circ$ 8 $x = 95^\circ$ 9 $y = 115^\circ$ 10 $m = 50^\circ$ 11 $x = 45^\circ, y = 90^\circ$ 12 $m = 60^\circ, n = 80^\circ$ 13 $x = 59^\circ$ 14 $x = 55^\circ, y = 70^\circ$ 15 $a = 65^\circ$