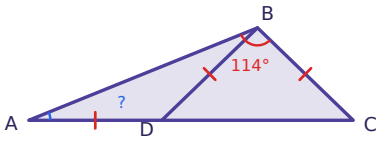
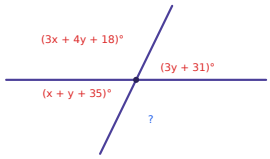
Angle Challenge Problems · 1

In triangle ABC, point D lies on AC so that AD = DB = BC. If ∠ABC = 114°, find ∠BAC.



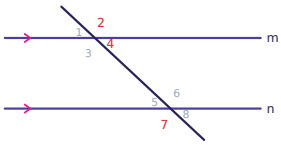
Angle Challenge Problems · 2

Two straight lines cross. Find x and y, then find the angle marked ?.



Angle Challenge Problems · 3

Lines m and n are parallel. m∠2 = (11x + 38)° and m∠7 = (15x + 2)°. Find m∠4.

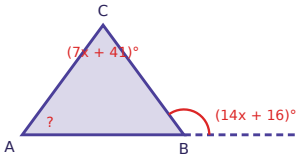


Angle Challenge Problems · 4

Each interior angle of a regular polygon is 5 times each exterior angle. Find the sum of its interior angles.

Angle Challenge Problems · 5

In triangle ABC, CA = CB. The exterior angle at B is (14x + 16)° and ∠C = (7x + 41)°. Find ∠A.

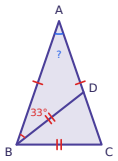


Angle Challenge Problems · 6

The exterior angles of a triangle (one at each vertex) are in the ratio 5 : 7 : 8. Find the largest interior angle of the triangle.

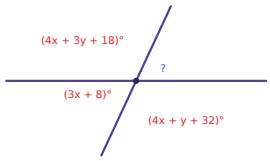
Angle Challenge Problems · 7

In triangle ABC, AB = AC. Point D lies on AC so that BD = BC. If ∠ABD = 33°, find ∠BAC.



Angle Challenge Problems · 8

Two straight lines cross. Find x and y, then find the angle marked ?.



Angle Challenge Problems · 2

ANSWER

116°

Angle Challenge Problems · 1

ANSWER

22°

Angle Challenge Problems · 4

ANSWER

1800°

Angle Challenge Problems · 3

ANSWER

43°

Angle Challenge Problems · 6

ANSWER

90°

Angle Challenge Problems · 5

ANSWER

38°

Angle Challenge Problems · 8

ANSWER

65°

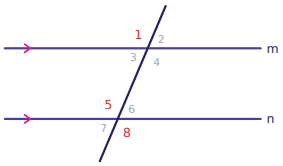
Angle Challenge Problems · 7

ANSWER

38°

Angle Challenge Problems · 9

Lines m and n are parallel. m∠8 = (6x + 11)° and m∠1 = (4x + 45)°. Find m∠5.

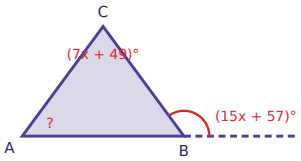


Angle Challenge Problems · 10

Each interior angle of a regular polygon is 108° more than each exterior angle. How many sides does it have?

Angle Challenge Problems · 11

In triangle ABC, CA = CB. The exterior angle at B is (15x + 57)° and ∠C = (7x + 49)°. Find ∠A.

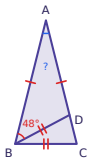


Angle Challenge Problems · 12

The exterior angles of a triangle (one at each vertex) are in the ratio 3 : 4 : 5. Find the largest interior angle of the triangle.

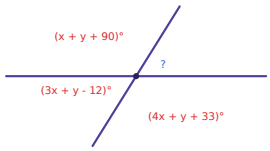
Angle Challenge Problems · 13

In triangle ABC, AB = AC. Point D lies on AC so that BD = BC. If ∠ABD = 48°, find ∠BAC.



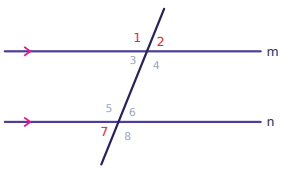
Angle Challenge Problems · 14

Two straight lines cross. Find x and y, then find the angle marked ?.



Angle Challenge Problems · 15

Lines m and n are parallel. m∠2 = (2x + 40)° and m∠7 = (7x - 30)°. Find m∠1.



Angle Challenge Problems · 16

Each interior angle of a regular polygon is 90° more than each exterior angle. How many sides does it have?

Angle Challenge Problems · 10

ANSWER

10

Angle Challenge Problems · 9

ANSWER

113°

Angle Challenge Problems · 12

ANSWER

90°

Angle Challenge Problems · 11

ANSWER

48°

Angle Challenge Problems · 14

ANSWER

58°

Angle Challenge Problems · 13

ANSWER

28°

Angle Challenge Problems · 16

ANSWER

8

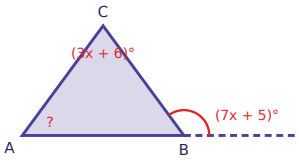
Angle Challenge Problems · 15

ANSWER

112°

Angle Challenge Problems · 17

In triangle ABC, CA = CB. The exterior angle at B is (7x + 5)° and ∠C = (3x + 6)°. Find ∠A.

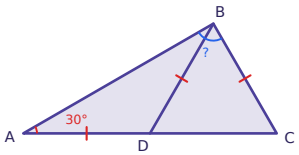


Angle Challenge Problems · 18

The exterior angles of a triangle (one at each vertex) are in the ratio 5 : 6 : 7. Find the largest interior angle of the triangle.

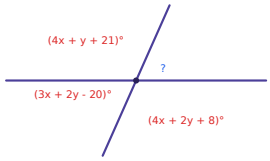
Angle Challenge Problems · 19

In triangle ABC, point D lies on AC so that AD = DB = BC. If ∠BAC = 30°, find ∠ABC.



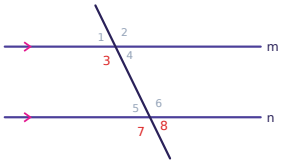
Angle Challenge Problems · 20

Two straight lines cross. Find x and y, then find the angle marked ?.



Angle Challenge Problems · 21

Lines m and n are parallel. m∠3 = (13x + 64)° and m∠7 = (9x + 80)°. Find m∠8.

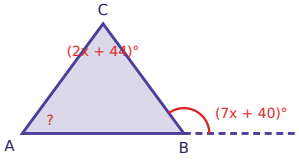


Angle Challenge Problems · 22

Each interior angle of a regular polygon is 120° more than each exterior angle. How many sides does it have?

Angle Challenge Problems · 23

In triangle ABC, CA = CB. The exterior angle at B is (7x + 40)° and ∠C = (2x + 44)°. Find ∠A.



Angle Challenge Problems · 24

The exterior angles of a triangle (one at each vertex) are in the ratio 3 : 7 : 8. Find the largest interior angle of the triangle.

Angle Challenge Problems · 18

ANSWER

80°

Angle Challenge Problems · 17

ANSWER

63°

Angle Challenge Problems · 20

ANSWER

66°

Angle Challenge Problems · 19

ANSWER

90°

Angle Challenge Problems · 22

ANSWER

12

Angle Challenge Problems · 21

ANSWER

64°

Angle Challenge Problems · 24

ANSWER

120°

Angle Challenge Problems · 23

ANSWER

56°