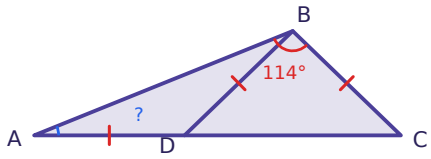
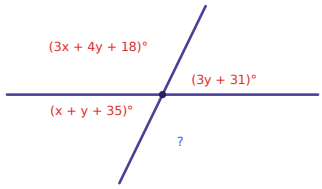
Task card 1 — Angle Challenge Problems

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



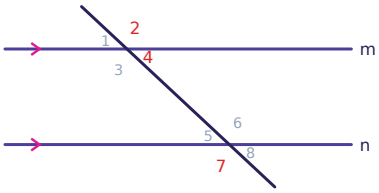
Task card 2 — Angle Challenge Problems

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



Task card 3 — Angle Challenge Problems

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

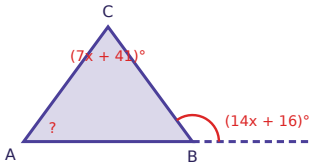


Task card 4 — Angle Challenge Problems

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

Task card 5 — Angle Challenge Problems

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

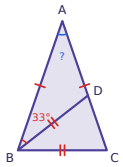


Task card 6 — Angle Challenge Problems

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.

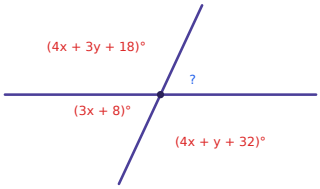
Task card 7 Angle Challenge Problems

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



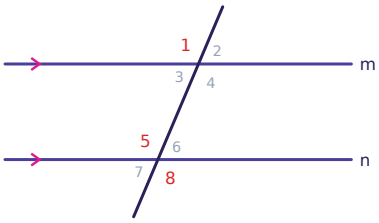
Task card 8 Angle Challenge Problems

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



Task card 9 Angle Challenge Problems

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

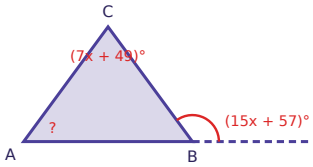


Task card 10 Angle Challenge Problems

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

Task card 11 Angle Challenge Problems

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

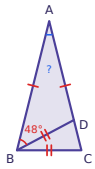


Task card 12 Angle Challenge Problems

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.

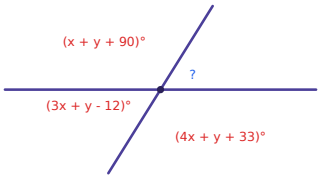
Task card 13 Angle Challenge Problems

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



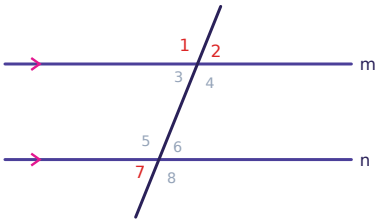
Task card 14 Angle Challenge Problems

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



Task card 15 Angle Challenge Problems

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

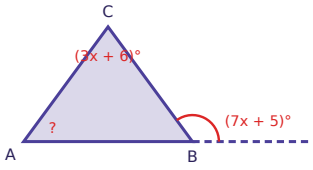


Task card 16 Angle Challenge Problems

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

Task card 17 Angle Challenge Problems

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

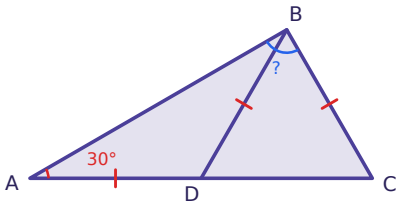


Task card 18 Angle Challenge Problems

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.

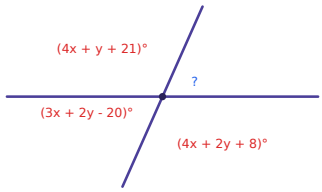
Task card 19 Angle Challenge Problems

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



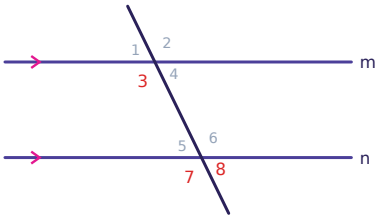
Task card 20 Angle Challenge Problems

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



Task card 21 Angle Challenge Problems

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

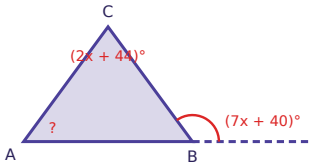


Task card 22 Angle Challenge Problems

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

Task card 23 Angle Challenge Problems

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



Task card 24 Angle Challenge Problems

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 Task Cards

Recording sheet · Grade 10 · Solve each problem. Lines marked with arrows are parallel and equal tick marks show equal sides. Figures are not drawn to scale.

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Angle Challenge Problems Task Cards: Answer Key

Grade 10 · Hard

The answers online

1. 22°	**2.** 116°	**3.** 43°
4. 1800°	**5.** 38°	**6.** 90°
7. 38°	**8.** 65°	**9.** 113°
10. 10	**11.** 48°	**12.** 90°
13. 28°	**14.** 58°	**15.** 112°
16. 8	**17.** 63°	**18.** 80°
19. 90°	**20.** 66°	**21.** 64°
22. 12	**23.** 56°	**24.** 120°