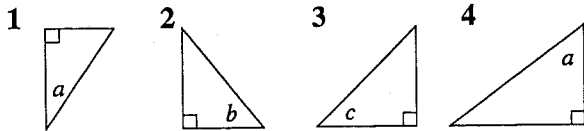


Trigonometry practice

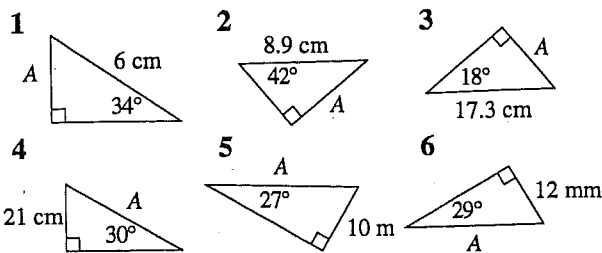
Skill 8.1 The sides in a right-angled triangle

Identify the hypotenuse (H), the side opposite (O) and adjacent (A) to the marked angle:



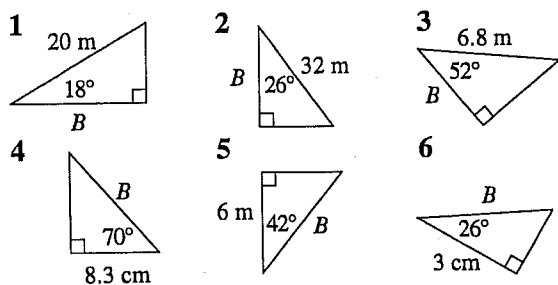
Skill 8.3 Using sin to find side lengths

Find the length of the side marked A in each of these triangles:



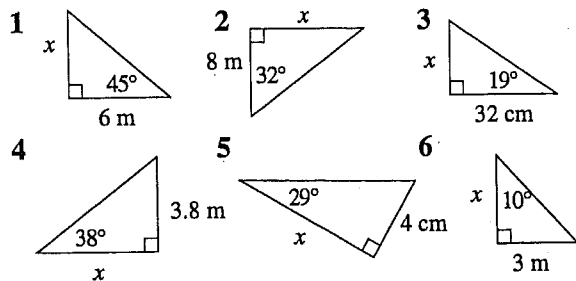
Skill 8.4 Using cos to find side lengths

Find the length of the side marked B in each of these triangles:



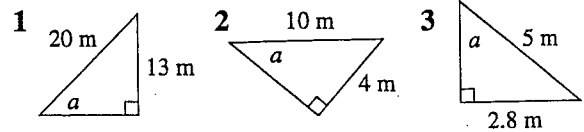
Skill 8.5 Using tan to find side lengths

Find the length of the side marked x in each of these triangles:



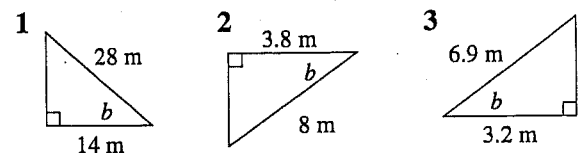
Skill 8.6 Using sin to find an angle

Find the angle marked a:



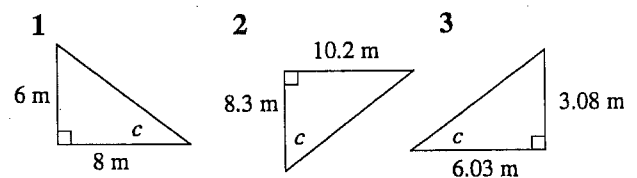
Skill 8.7 Using cos to find an angle

Find the angle marked b:



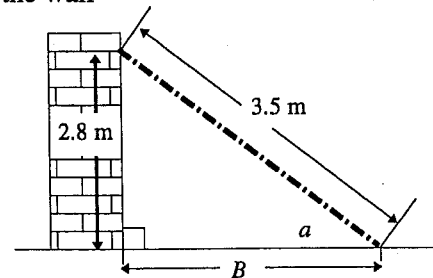
Skill 8.8 Using tan to find an angle

Find the angle marked c:

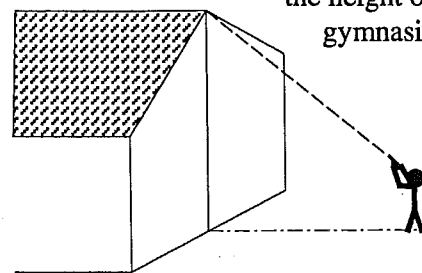


Skill 8.9 Solving practical problems

- A ladder leaning up against a wall reaches 2.8 m up the wall. If the ladder is 3.5 m long find:
 - the angle it makes with the ground
 - the distance from the foot of the ladder to the wall

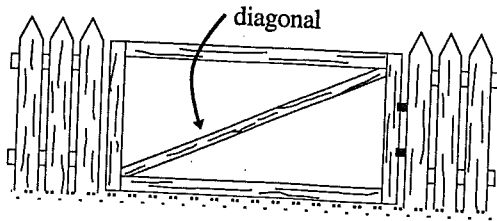


- Lucinda's maths project is to measure the height of her school gymnasium using trigonometry. She stood 12 m from the wall and held the inclinometer exactly 1.4 m from the ground. If the angle of elevation is 43° find the height of the gymnasium.



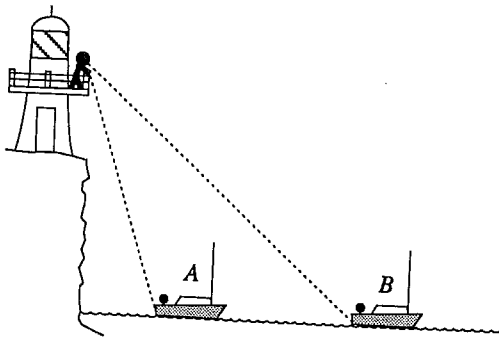
- 3 A rectangular gate measures 1.4 m by 1.2 m.
Find:

- (a) the length of its diagonal
(b) the angle that the bottom of the gate makes with the diagonal



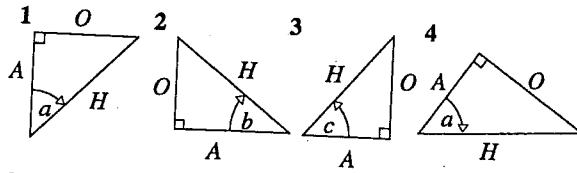
- 4 William, the lighthouse operator, sights two boats, the *Adelaide* (A), and the *Brunswick* (B) from his lighthouse where he is positioned exactly 104 m above sea level. If the angles of depression are 75° and 42° to the boats, find the nearest to the metre:

- (a) the distances that each boat is from the base of the cliff.
(b) if they are directly behind each other, how far apart are they?



8 Trigonometry

Skill 8.2



Skill 8.3

- | | |
|------------------|------------------|
| 1 $A = 3.36$ cm | 2 $A = 5.96$ cm |
| 3 $A = 5.35$ cm | 4 $A = 42$ cm |
| 5 $A = 22.03$ cm | 6 $A = 24.75$ mm |

Skill 8.4

- | | |
|-----------------|------------------|
| 1 $B = 19.02$ m | 2 $B = 28.76$ m |
| 3 $B = 4.19$ m | 4 $B = 24.27$ cm |
| 5 $B = 8.07$ m | 6 $B = 3.34$ cm |

Skill 8.5

- | | |
|-----------------|-----------------|
| 1 $x = 6$ m | 2 $x = 5.00$ m |
| 3 $x = 11.02$ m | 4 $x = 4.86$ m |
| 5 $x = 7.22$ cm | 6 $x = 17.01$ m |

Skill 8.6

- | | |
|---------------------|---------------------|
| 1 $a = 40.54^\circ$ | 2 $a = 23.58^\circ$ |
| 3 $a = 34.06^\circ$ | |

Skill 8.7

- | | | |
|------------------|---------------------|---------------------|
| 1 $b = 30^\circ$ | 2 $b = 61.64^\circ$ | 3 $b = 62.37^\circ$ |
|------------------|---------------------|---------------------|

Skill 8.8

- | | | |
|---------------------|---------------------|---------------------|
| 1 $c = 36.87^\circ$ | 2 $c = 50.86^\circ$ | 3 $c = 27.06^\circ$ |
|---------------------|---------------------|---------------------|

Skill 8.9

- | | |
|-------------------------------|-----------|
| 1 (a) 53.13° (b) 2.1 m | 2 12.59 m |
| 3 (a) 1.8 m (b) 40.6° | |
| 4 (a) $A = 28$ m, $B = 116$ m | (b) 88 m |