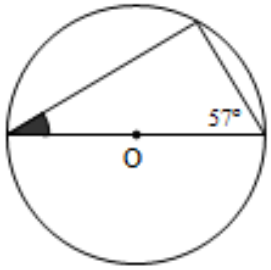
# National 4 Mathematics: Homework 6

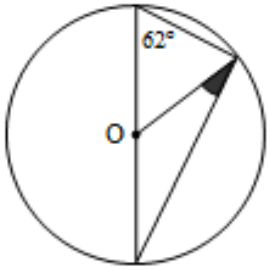
## § 1 Angles in a Circle

**1** Find the size of the shaded angles in each diagram.
(O is the centre of each circle, PS and PT are tangents)

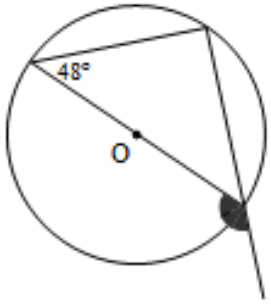
**1.**



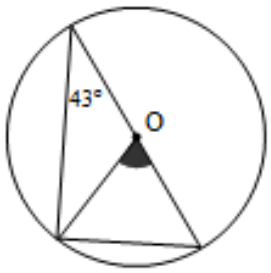

**2.**



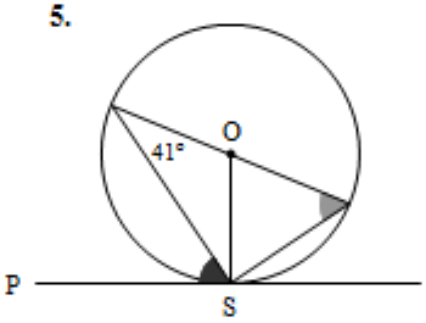

**3.**



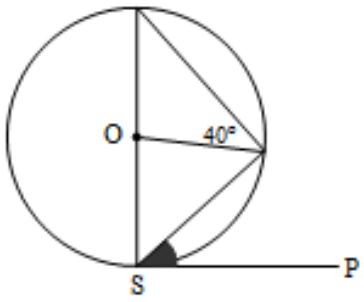

**4.**




**5.**




**6.**

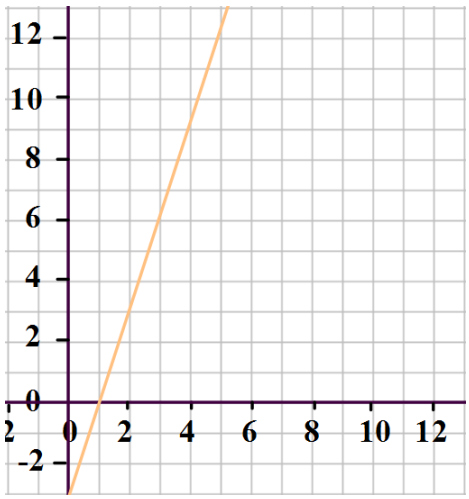



## § 2 Gradient

**1** Calculate the gradient of the line joining each pair of points below.

(a) A(1,3) , B(7,15) (b) C(1,9) , D(3,5) (c) E(-1,11) , F(5,5)

**2** Calculate the gradient of the line



# National 4 Mathematics: Homework 6

## § 3 Mixed

**1** Calculate

a) 8.5 + 3.6 b) 7.1 – 3.4 c) 6.25 + 3.75

d) 14 – 1.6 e) 2 – 0.07

**2** Calculate

a) 10 x 2.74 b) 185 ÷ 100 c) 37.02 x 100

d) 4 ÷ 10 e) 14360 ÷ 1000 f) 6.2 x 20

**3** Remove brackets the simplify:

a) 4 (3m + 8n) b) a (a + 3)

c) 7 (3 – 3x) – 14 d) 5 (2 + 3x) – 2 (3 – 2x)

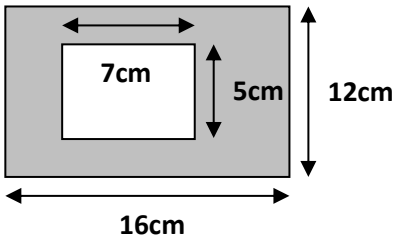
**4** Solve the following equations:

a) n + 2 = -4 b) 2x + 1 = -3 c) 6x = 54

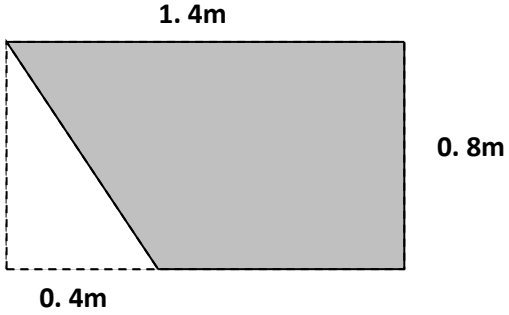
d) 2 (3x + 1) = -4 e) 3k + 1 = 10 f) 4 (1 + 2x) = 2 (3x – 8)

**5** Calculate the shaded areas of the following shapes.

a)




b)




**6**

| Train Timetable | |
|---|---|
| Newton depart | 10.23 a.m. |
| Craigie arrive | 2.18 p.m. |

If the distance between the two towns is 384km, what is the average speed of the train?