

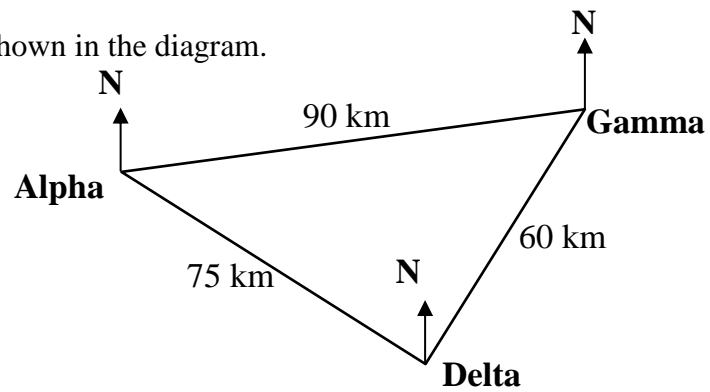
Mathematics (National 5) USAP 2(a) Homework – Ink Exercise

1. A line passes through the points A(-2, -4) and B(8, 1).
- (a) Find the gradient of the line AB. (2)
- (b) Find the equation of the line AB. (2)
2. A straight line has equation $3y - 2x = 6$.
Find the gradient and y-intercept of the line. (3)
3. Find the equation of the straight line joining the points P(-4, 1) and Q(2, -3). (3)
4. (a) $3(x + 7) + 2x$ (b) $16y - 5(2y + 3)$ (c) $7(s - 2) - 13$ (3)
5. (a) $9(a + 5) + 7(2a + 7)$ (b) $7(y - 8) - 5(3y - 6)$ (3)
6. (a) $(x + 4)(x + 7)$ (b) $(y - 9)(y - 3)$
(c) $(s + 12)(s - 2)$ (d) $(2a + 5)(a + 9)$
(e) $(3w - 8)(2w + 1)$ (f) $(4x - 3)^2$ (6)
7. (a) $(x + 1)(x^2 + 1)$ (b) $(x - 2)(2x^2 - 3x - 2)$ (5)

8. Three oil platforms, Alpha, Gamma and Delta are situated in the North Sea as shown in the diagram.

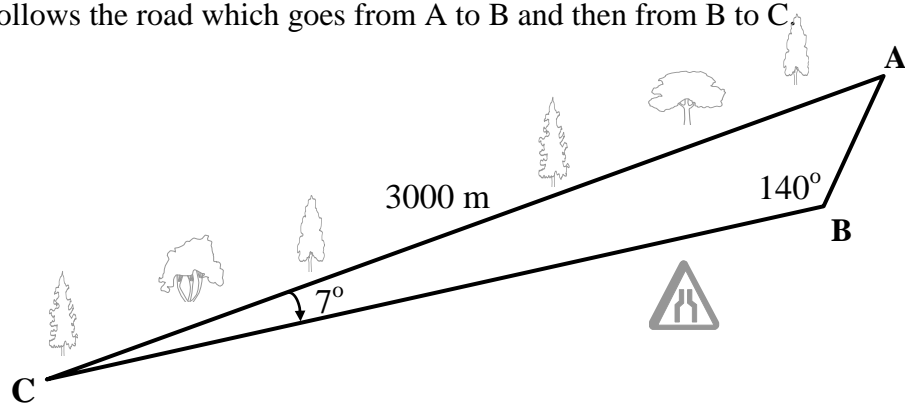
The distances between the oil platforms are shown in the diagram.

If the bearing of Delta from Alpha is 125° , what is the bearing of Gamma from Alpha?



(6)

9. On an orienteering course, Ian follows the direct route through a forest from A to C while Kate follows the road which goes from A to B and then from B to C.

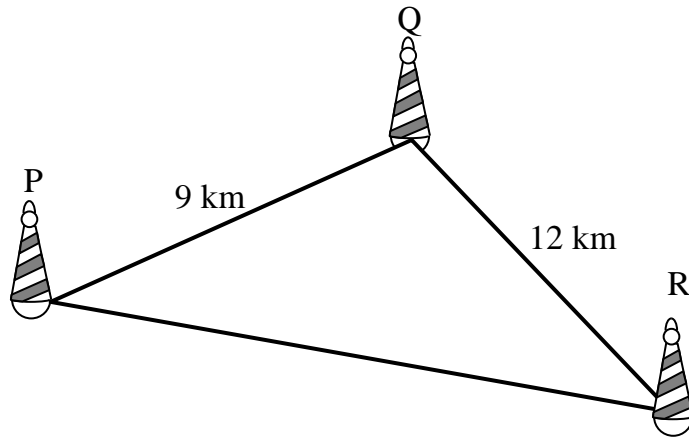


Calculate the total distance which Kate has to travel from A to C.

(8)

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10. A small boat race travels round a set of three buoys to cover a total distance 35 km.



- (a) Calculate the size of angle PQR.
- (b) Calculate the area of triangle PQR. (6)

Total – 47 marks