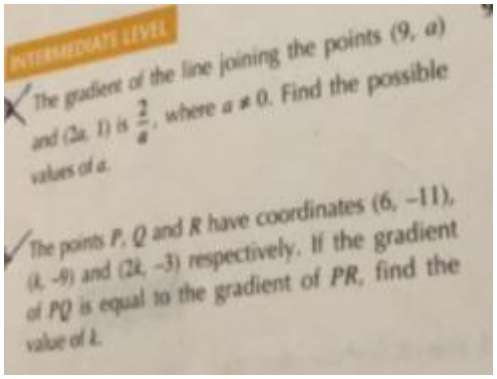
Q1: both Questions

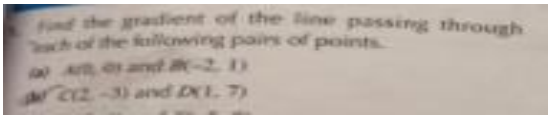


INTERMEDIATE LEVEL

The gradient of the line joining the points $(9, a)$ and $(2a, 1)$ is $\frac{2}{a}$, where $a \neq 0$. Find the possible values of a.

The points P, Q and R have coordinates $(6, -11)$, $(k, -9)$ and $(2k, -3)$ respectively. If the gradient of PQ is equal to the gradient of PR, find the value of k.

Q2:

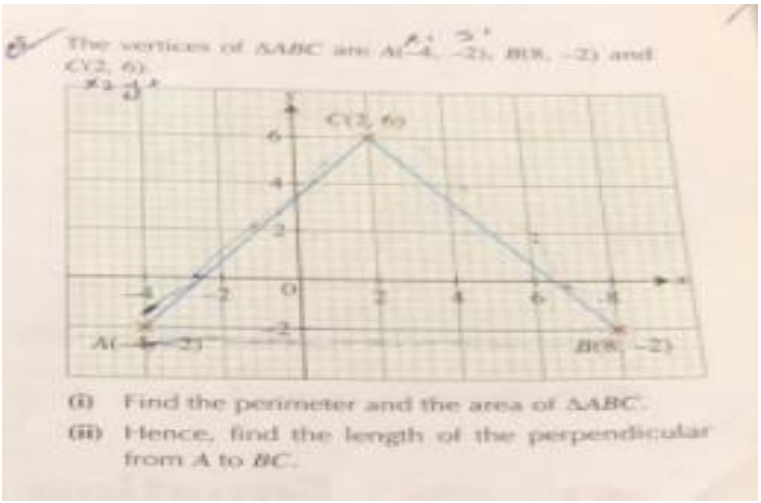


Find the gradient of the line passing through each of the following pairs of points.

(a) A(1, 0) and B(−2, 1)

(b) C(2, −3) and D(1, 7)

Q3:

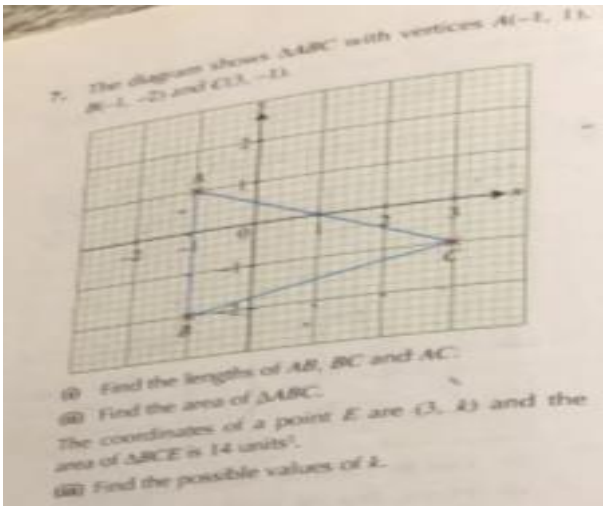


The vertices of ΔABC are A(−4, −2), B(8, −2) and C(2, 6).

(i) Find the perimeter and the area of ΔABC.

(ii) Hence, find the length of the perpendicular from A to BC.

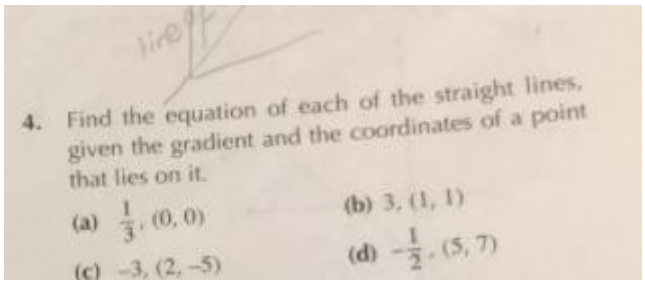
Q4:



Q5:

a) The point (-3,3)lies on the line y= 4x + k, find the value of K

b)



4. Find the equation of each of the straight lines, given the gradient and the coordinates of a point that lies on it.

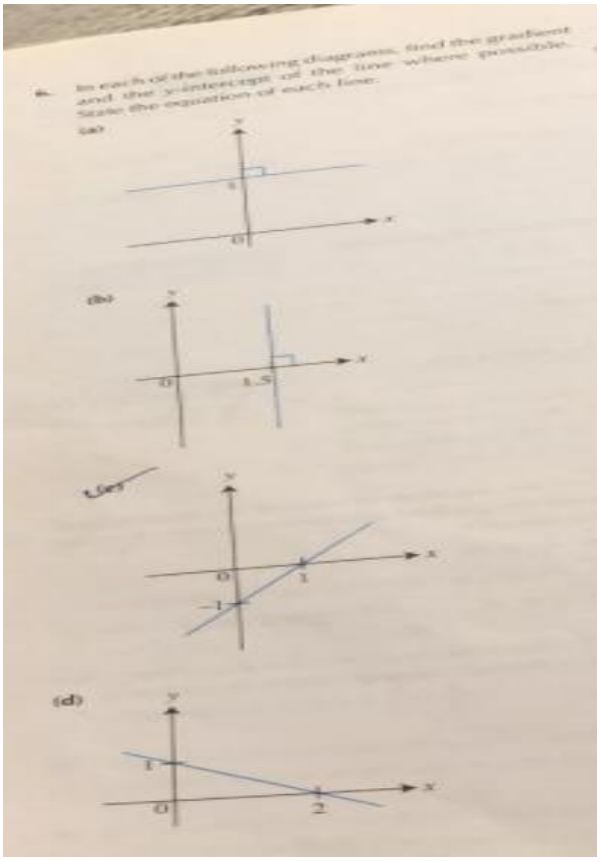
(a) $\frac{1}{3}$, (0, 0)

(b) 3, (1, 1)

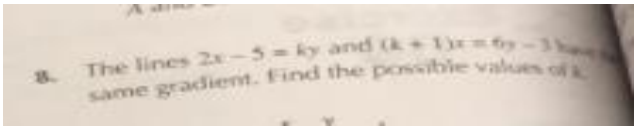
(c) −3, (2, −5)

(d) $-\frac{1}{2}$, (5, 7)

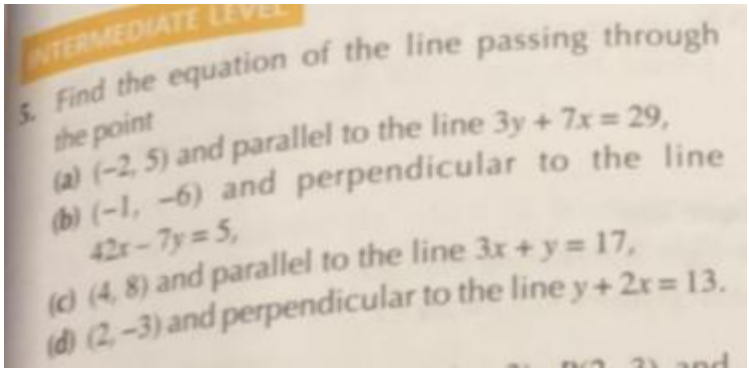
Q6:


(b)
1.5
(d)
1
2

Q7:


8. The lines 2x − 5 = ky and (k + 1)x = 6y − 3
same gradient. Find the possible values of k

Q8:


INTERMEDIATE LEVEL
5. Find the equation of the line passing through the point
(a) (−2, 5) and parallel to the line 3y + 7x = 29,
(b) (−1, −6) and perpendicular to the line 42x − 7y = 5,
(c) (4, 8) and parallel to the line 3x + y = 17,
(d) (2, −3) and perpendicular to the line y + 2x = 13.

Q9:

working clearly. are

10. The coordinates of 3 points are $A(-1, -6)$, $B(3, -12)$ and $C(k, 6)$. Find the value of k if

(a) A, B and C are collinear,

(b) AB is perpendicular to AC.