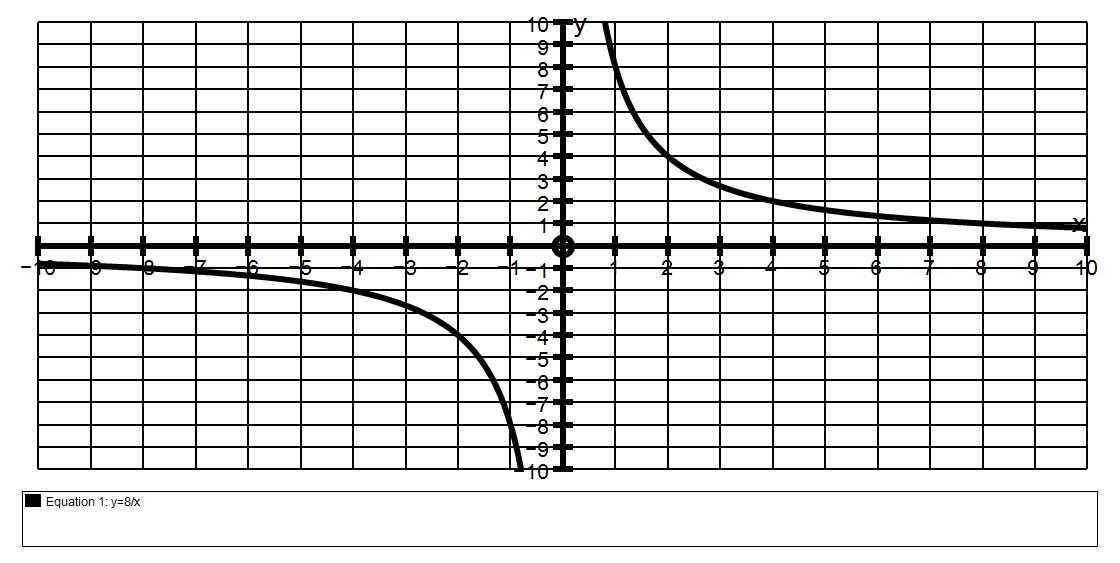
**Towards Excellence.**

1.



(a) Find algebraically, the intersection points of the graphs ***y = 8*** and ***y = -x + 6***

***x***

(b)(i) If ***y = -x + c*** is to be a tangent to ***y = 8*** find c

*x*

(ii) Explain fully why there are **two values for c**.

(c) Find all the values of c for which the line ***y = -x + c*** will cross the

Hyperbola ***y = 8*** at exactly **two points.**

***x***

(d) Find all the values of c for which the line ***y = -x + c*** **will NOT cross** the

Hyperbola ***y = 8*** at all.

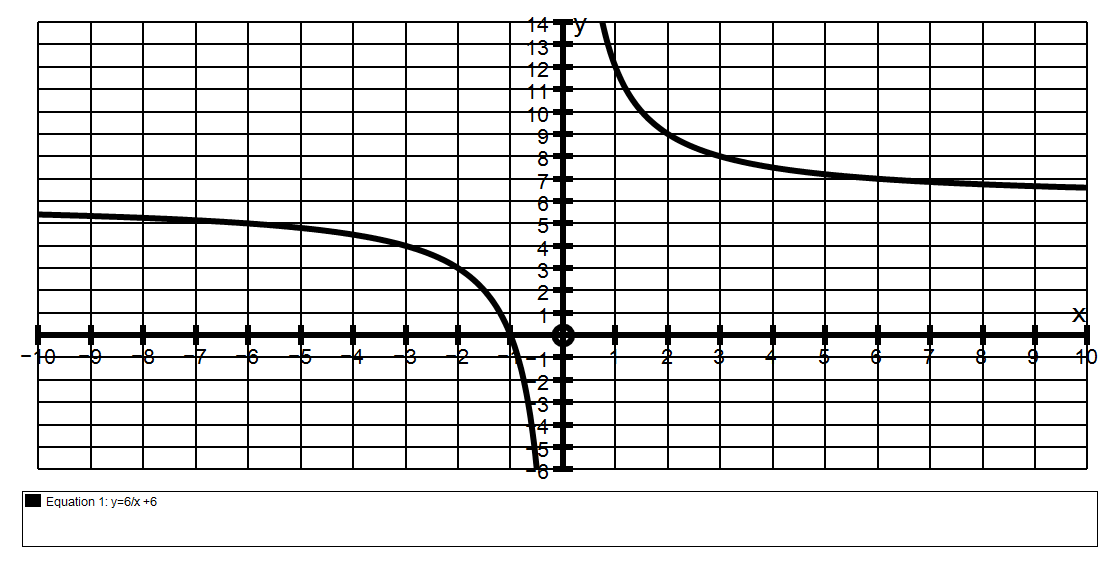
***x***

2. The graph shown has the equation ***y = 6 + 6***

***x***

If a line ***y = mx*** is to be a tangent to ***y = 6 + 6*** find ***m.***

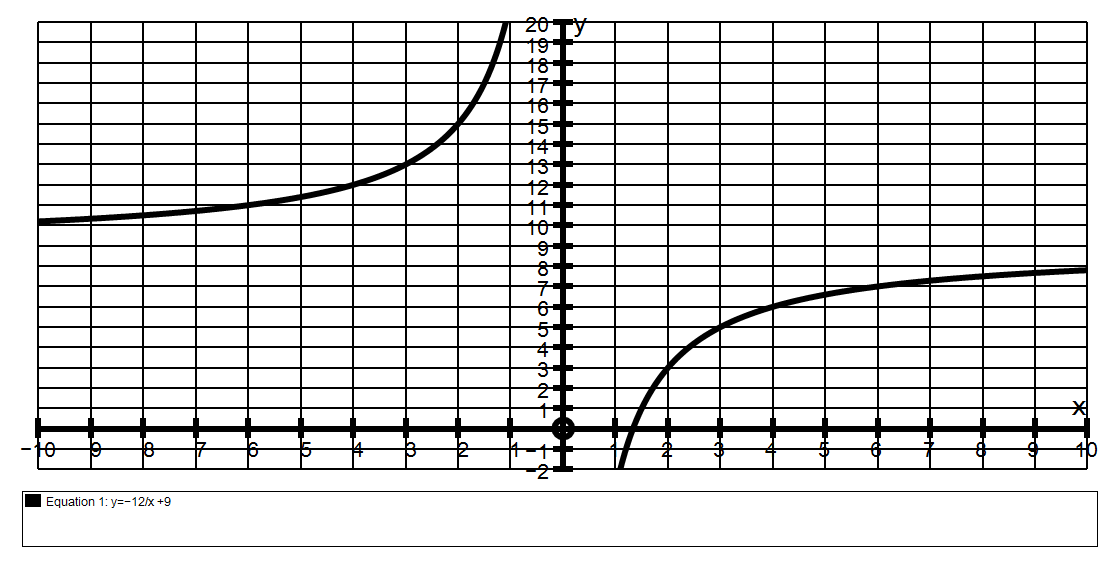
***x***



3. The graph below has the equation ***y = -12 + 9***

***x***

If a tangent has a gradient of 2, find the coordinates of the point where the tangent meets the ***x*** axis.



**Explain clearly why there are TWO answers!**