

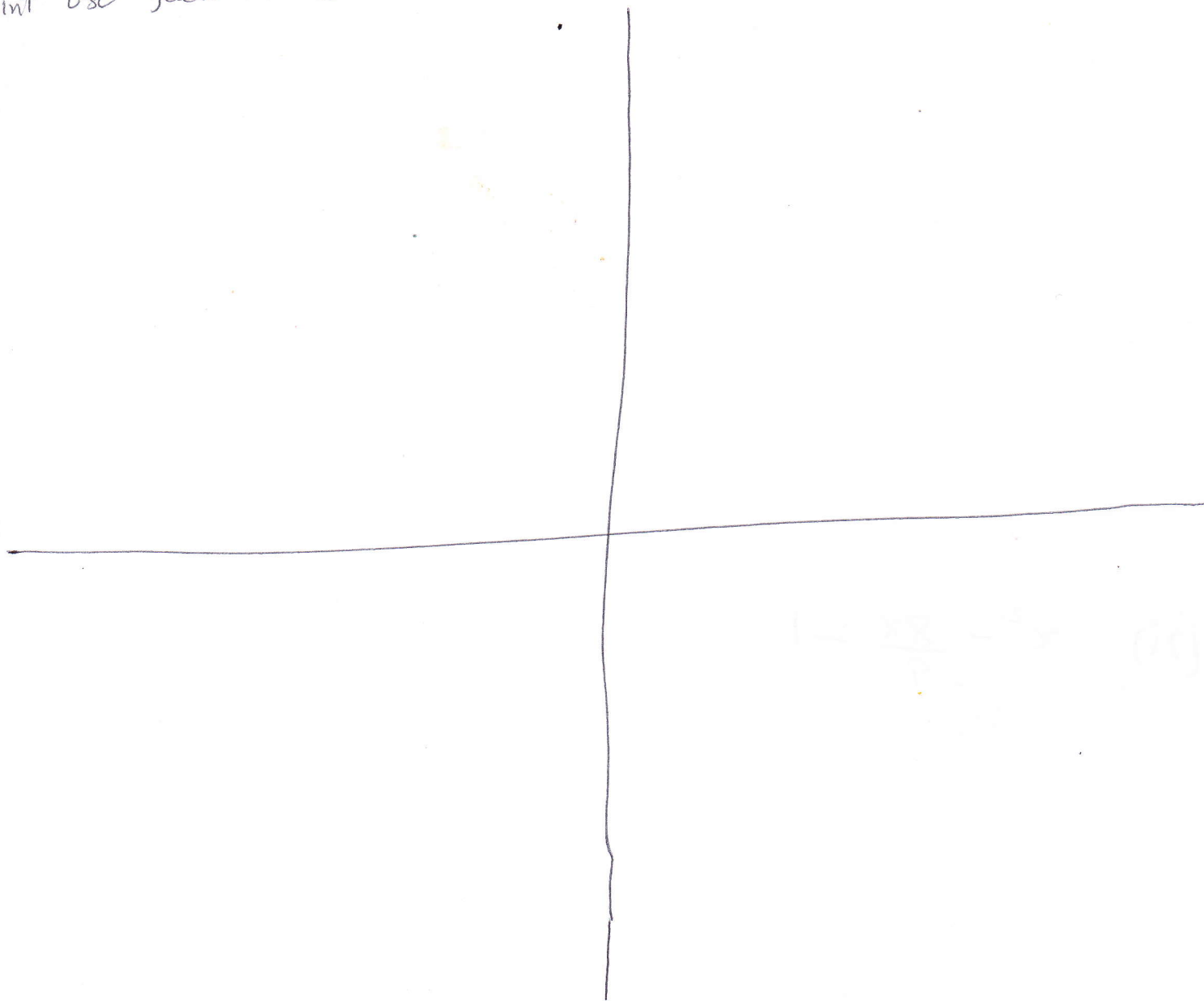
i) Graph the following equations on the graph below.

(i) $y = x^2 - 1$

(ii) $y = x^2 + 2x + 1$

(iii) $y = -x^2 + 1$ (iv) $y = \frac{1}{x^2}$

[Hint use factorization]



2) Factorize the following

(i) $-2x^2 + 9x - 7$

(ii) $x^2 - \frac{8x}{9} - 1$

3) In A given basketball game, a team has certain chance of winning. In a following basketball game, this team has the same chance of winning (in other words, the team is consistent). If the probability that the team will win the first game and loose the second game is $\frac{2}{9}$, what is the probability that the team will win the third game, assuming the team is consistent (with its probability of winning or losing these games).
[Hint this question combines quadratics and probabilities]

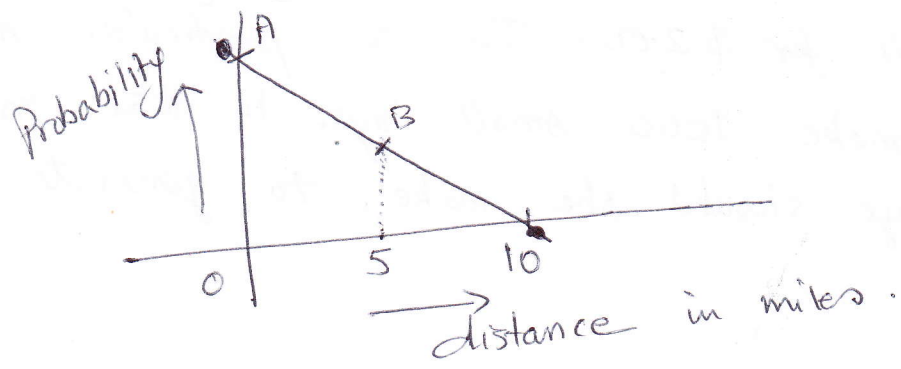
4) In the following series

15, 18, 21, 24, 27 ...

find the ratio of 99^{th} number in the series to the 105^{th} number in the series

5) Tanvi started a business and her rent and other fixed costs of running the business total upto \$3000 per month. Her business makes two types of toys, a small toy and a big toy. The small toy costs \$1.50 and big toy ~~costs~~ costs \$2 to make. The big toy sells for \$3.00 and small toy sells for \$2.00. In a particular month, Tanvi plans to make 1000 small toys. In that month, how many big toys should she make, to generate a profit of \$1000?

6) An aspiring marathon runner has started a 10 mile run. Probability that he will run a particular distance ~~(and stop)~~ ~~is~~ ~~inversely proportional to the distance (between 0 and 10 miles).~~ and stop looks like the graph below.



What is the probability that he will run 5 miles and stop?