#11 Solve by factoring (i.e. not by quadratic formula). Use the most direct method you can see to arrive at the roots. (Be sure to set = zero)

- $x^2 + 4x - 32 = 0$
- $x^2 - m = 30$
- $6x^2 = 5$
- $9x^2 - 1 = 0$
- $x^2 + 4 = 0$
- $x^2 + 7x - 9 = -3 + 6x$

#12 Solve by quadratic formula; give the roots separately; reduced fully!

- $3x^2 - 2x - 1 = 0$
- $2x^2 + 7x - 49 = 0$ (Note: $b^2 - 4ac = 7^2 - 4(2)(-49)$
  $= 49 + 8(49) = 49(1+8)$
  $= 49(9)$
  This is a perfect square $\rightarrow = 441$)
- $4x^2 + 6 = 0$
- $10 - 6x + x^2 = 0$
- $x^2 - 2\sqrt{7} + 7 = 0$

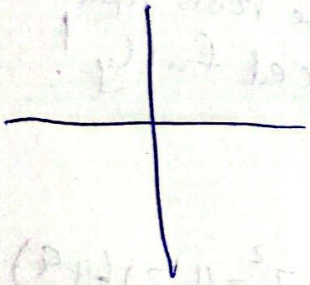
#12 Find the y-intercept: (that means let $x=0$)

- $y = x^4 - 2x^3 + 17x - 14$
- $y = 22 - 8x + 15x^2$

These represent _____ when graphed, just like any $y = ax^2 + bx + c$, or written as a polynomial in the other general form, $y = a_2x^2 + a_1x + a_0$..

#13 Graph these 3 parabolas + ~~name~~ give all intercepts as ordered pairs:

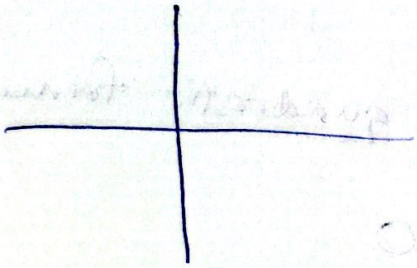
$y = x^2$



x-int (roots):

y-int:

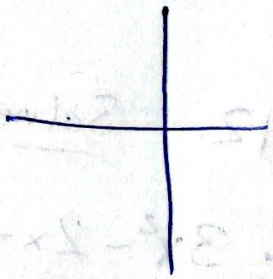
$y = x^2 - 6$



x-int (roots):

y-int:

$y = x^2 + 3$



x-int (roots):

y-int:

#14 True or false?

- $y = mx + b$ is a polynomial _____
- All quadratic eqns have real roots _____
- All parabolas have a y-intercept _____