

Name: _____

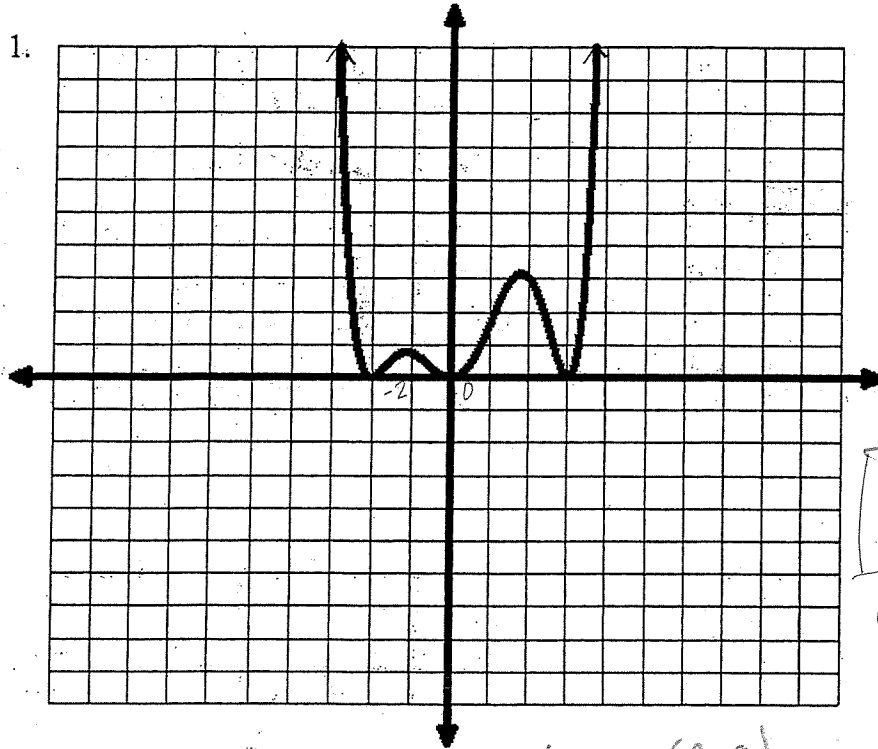
KBY

Date: _____

Advanced Algebra II Honors: Writing Equations of Polynomial Functions

Write the equation of each graph.

1.



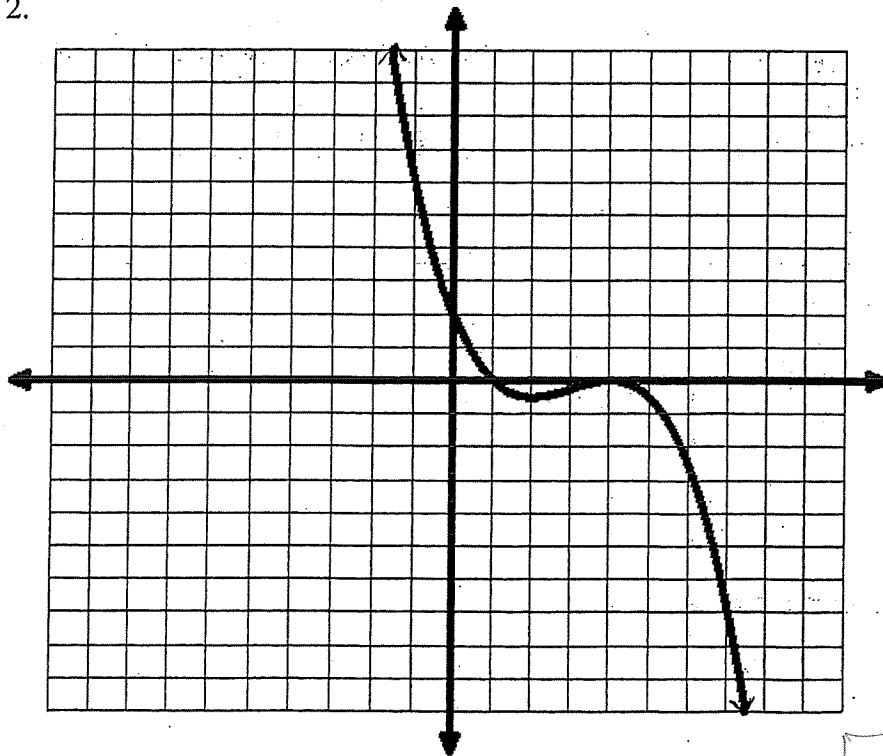
$(x+2)^2$
 x^2
 $(x-3)^2$
 even degree
 + LC

$$P(x) = \frac{3}{64}x^2(x+2)^2(x-3)^2$$

$(2, 3)$
 $3 = K(2^2)(2+2)^2(2-3)^2$
 $3 = K(4)(16)(1)$
 $K = \frac{3}{64}$

* Don't use $(0, 0)$.

2.



- h.c.
 odd degree
 y-int = $(0, 2)$
 $(x-1)$
 $(x-4)^2$

$P(x) = -(x-1)(x-4)^2$
 $2 = -k(-1)(16)$
 $\frac{1}{8} = k$

$$P(x) = -\frac{1}{8}(x-1)(x-4)^2$$

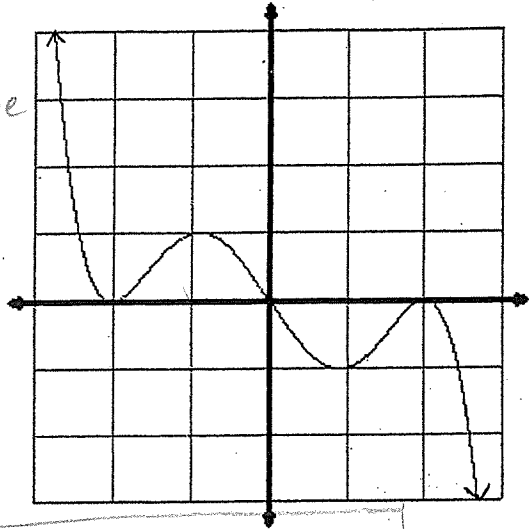
For each of the following equations give an equation.

1.

- L.C.
odd degree

$(x+2)^2$
 $(x-0)$
 $(x-2)^2$

$(-1, 1)$



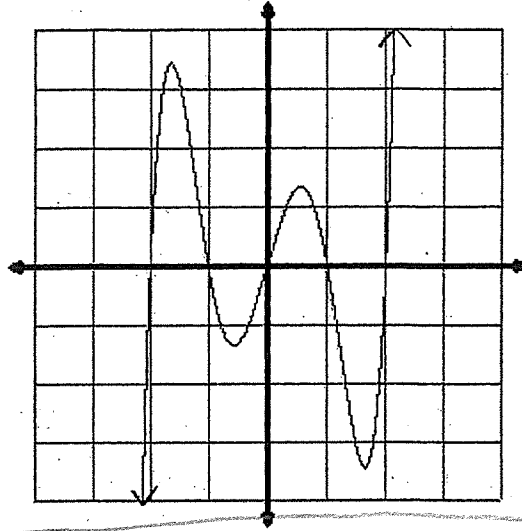
$$P(x) = \frac{1}{9}(x-0)(x-2)^2(x+2)^2$$

$1 = K(-1)(9)(1)$

2.

+ L.C.
odd degree

$(x+2)$
 $(x+1)$
 $(x-0)$
 $(x-1)$
 $(x-2)$

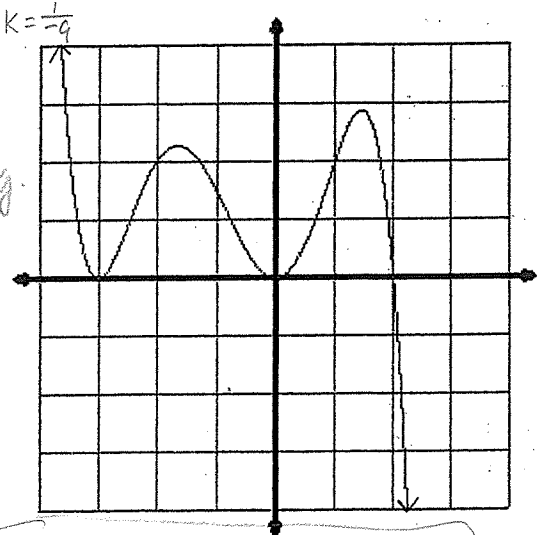


$$P(x) = (x+2)(x+1)(x-0)(x-1)(x-2)$$

3.

- L.C.
odd deg.

$(x+3)^2$
 $(x-0)^2$
 $(x-2)$
 $(1, 2)$

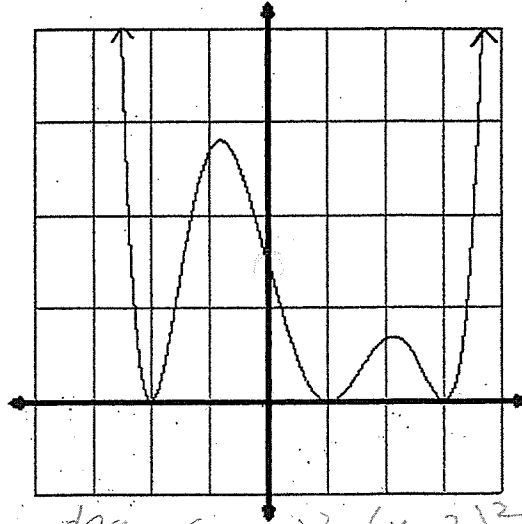


$$P(x) = \frac{1}{8}(x+3)^2(x)^2(x-2)$$

$2 = K(16)$

4.

even deg
(+) L.C.
 $(x+2)^2(x-3)^2$
 $(x-1)^2(0, 1.5)$



$$1.5 = K(2)^2(-1)^2(-3)^2$$

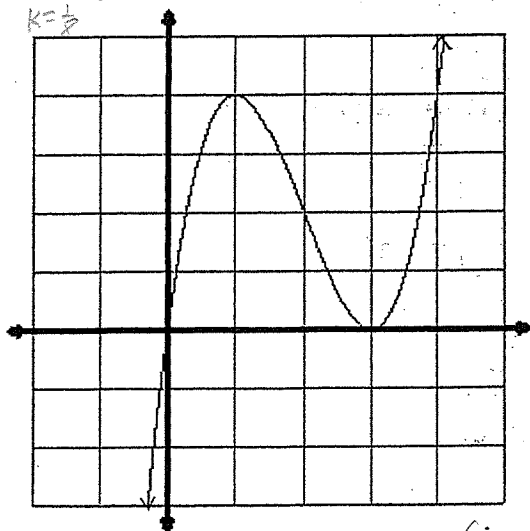
$$1.5 = 4K(9)$$

$$K = \frac{1.5}{36} = \frac{3}{2} \cdot \frac{1}{36} = \frac{1}{24}$$

$$P(x) = \frac{1}{24}(x+2)^2(x-3)^2(x-1)^2$$

5.

$K = \frac{1}{2}$



(+) L.C.
odd deg.

$(x-0)$
 $(x-3)^2$

$$P(x) = (x)(x-3)^2$$

$4 = K(4)$

$1 = K$

$P(x) =$

$(1, 4)$