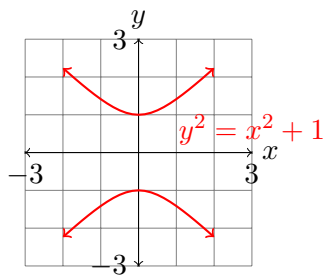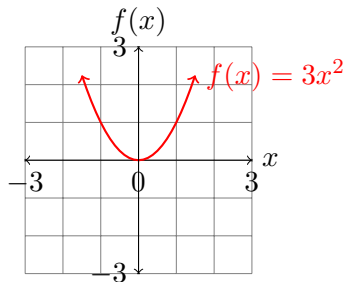## COLLEGE ALGEBRA QUIZ

(1) Visually determine whether the following functions are symmetric with respect to the x-axis, y-axis, and the origin.
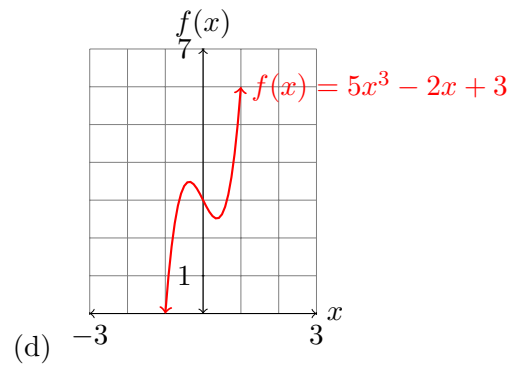
(a)

(b)
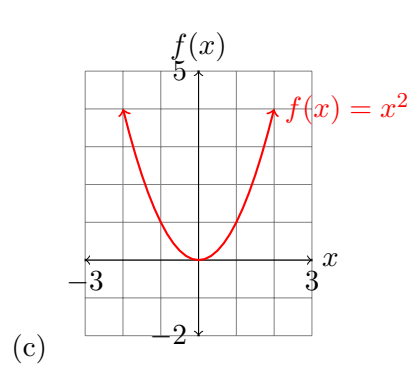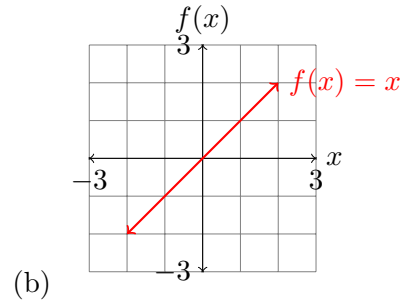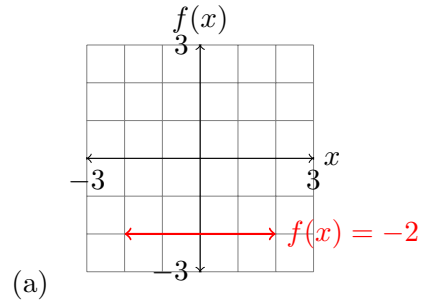
Solution:
(a) y-axis only.
(b) x-axis, y-axis and origin.

(2) Determine algebraically, whether the following equations are symmetric with respect to the x-axis, y-axis, and the origin.

(a) $x^2 + y^2 = 9$

(b) $x + y = 2$

(c) $y = 4x^3$

(d) $y = x^4 - 2x^2$

Solution:
(a) x-axis, y-axis, and the origin
(b) none
(c) origin only
(d) y-axis only

(3) Visually determine whether the following functions are even, odd, or neither even nor odd.

$f(x)$

$f(x) = -2$

(a)

$f(x)$

$f(x) = x$

(b)

$f(x)$

$f(x) = x^2$

(c)

$f(x)$

$f(x) = 5x^3 - 2x + 3$

(d)

Solution:
(a) even
(b) odd
(c) even
(d) neither

(4) Determine whether the function is even, odd, or neither even nor odd.

(a) $f(x) = x^{19}$

(b) $f(x) = \frac{1}{x^2}$

(c) $f(x) = |x|$

Solution:
(a) odd
(b) even
(c) even