



関数の増減・グラフの概形

氏名 \_\_\_\_\_

得点 \_\_\_\_\_

20 / 50

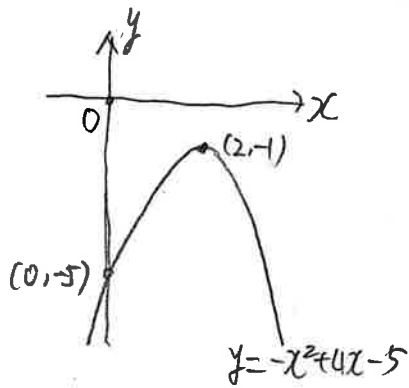
1 次関数のグラフをかけ。

(各5点)

(1)  $y = -x^2 + 4x - 5 = f(x)$

$f'(x) = -2x + 4$   
 $f'(x) = 0 \Rightarrow x = 2$   
 $f(2) = -4 + 8 - 5 = -1$

$x$	2
$f'(x)$	+
$f(x)$	-

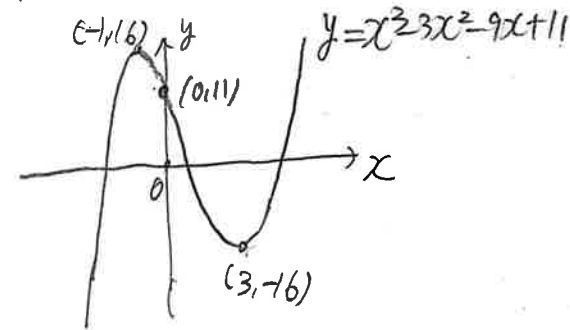


(2)  $y = x^3 - 3x^2 - 9x + 11 = f(x)$

$f'(x) = 3x^2 - 6x - 9$   
 $f'(x) = 0 \Rightarrow 3x^2 - 6x - 9 = 0$   
 $x^2 - 2x - 3 = 0$   
 $(x-3)(x+1) = 0$   
 $x = 3, -1$

$f(-1) = -1 - 3 + 9 + 11 = 16$   
 $f(3) = 27 - 27 - 27 + 11 = -16$

$x$	-1	3
$f'(x)$	+	-
$f(x)$	+	-

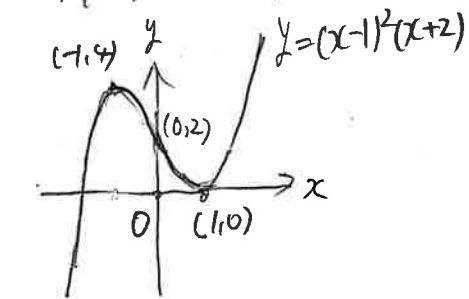


(3)  $y = (x-1)^2(x+2) = f(x)$

$f(x) = (x^2 - 2x + 1)(x+2) = x^3 - 3x^2 + 2$   
 $f'(x) = 3x^2 - 6x$   
 $f'(x) = 0 \Rightarrow 3x^2 - 6x = 0$   
 $x^2 - 2x = 0$   
 $x(x-2) = 0$   
 $x = 2$

$f(-1) = (-2)^2(1) = 4$   
 $f(1) = 0$

$x$	-1	1
$f'(x)$	+	-
$f(x)$	+	-



(4)  $y = x^3 + 6x^2 + 12x = f(x)$

$f'(x) = 3x^2 + 12x + 12$   
 $f'(x) = 0 \Rightarrow 3x^2 + 12x + 12 = 0$   
 $x^2 + 4x + 4 = 0$   
 $(x+2)^2 = 0$   
 $x = -2$

$f(-2) = -8 + 24 - 24 = -8$

$x$	-2
$f'(x)$	+
$f(x)$	-

