KEY

Problem Set – Quadratic Skill Check (part 1)

Factor the quadratic using the method of your choice

1) $y = x^2 - 22x + 120$

$y = (x-10)(x-12)$

2) $y = 5x^2 + 3x - 2$

$y = (5x-2)(x+1)$

3) $y = 2x^2 + 7x + 1$

PRIME

4) $y = 9x^2 - 12x + 4$

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

5) $y = 100x^2 - 1$

$y = (10x+1)(10x-1)$

6) $y = 6x^2 + 26x + 28$

$y = 2(x+2)(3x+7)$

Identify the vertex. Classify as a maximum or minimum.

7) $y = 2x^2 - 4x + 3$

$(1, 1)$

MIN.

8) $y = -3(x+4)^2 - 9$

$(-4, -9)$

MAX

9) $y = 2x^2 - 2x - 24$

$(\frac{1}{2}, \frac{-49}{2})$

MIN

Identify the following characteristics: shape/direction, line of symmetry, and x/y-intercepts

10) $y = 3x^2 - 17x + 6$

SHAPE: ∪

LOS: $x = \frac{17}{6}$

Y-INT: $(0, 6)$

X-INT: OMIT

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

SHAPE: ∪

LOS: $x = -1$

Y-INT: $(0, -3)$

X-INT: $(-2, 0)$ & $(0, 0)$

12) $y = -2x^2 - 2x + 40$

SHAPE: ∩

LOS: $x = \frac{-1}{2}$

Y-INT: 40

X-INT: OMIT

Graph the function, then state the domain and range.

13) $y = 2x^2 - 8x + 6$

VERTEX: $(2, -2)$

DOMAIN

$(-\infty, \infty)$

RANGE

$[-2, \infty)$

14) $y = -2(x+2)^2 + 10$

VERTEX: $(-2, 10)$

DOMAIN

$(-\infty, \infty)$

RANGE

$(-\infty, 10]$

15) $y = x^2 + 4x - 21$

VERTEX: $(-2, -25)$

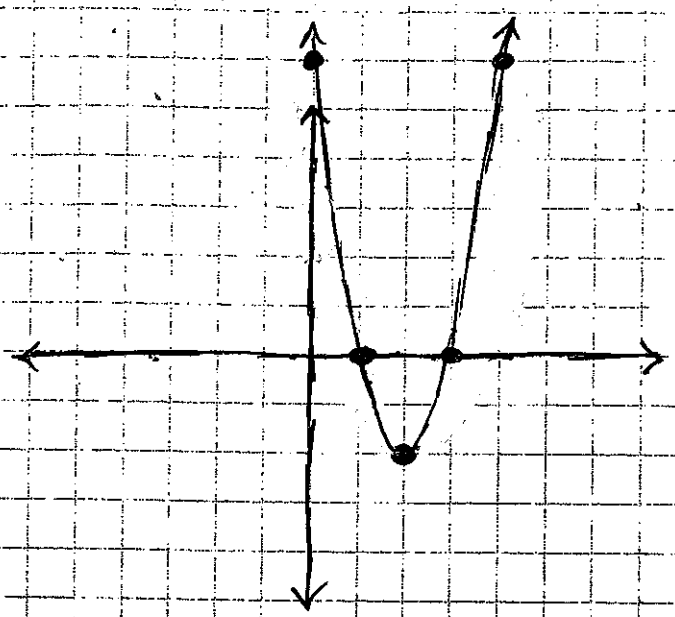
DOMAIN

$(-\infty, \infty)$

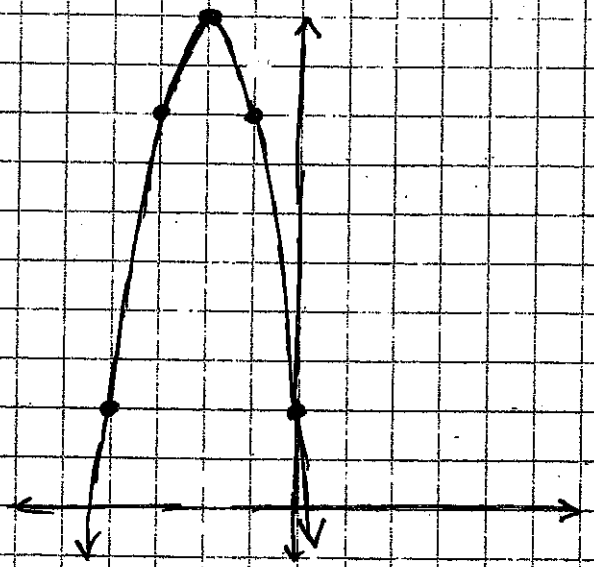
RANGE

$[-25, \infty)$

(13)



(14)



(15)