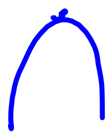
Check-Up

2. Determine the domain and range of the quadratic $f(x) = -5x^2 + 10x - 3$.

opens down

D: $x \in R$ OR $(-\infty, \infty)$

R: $\{y / y \leq 2, y \in R\}$ $(-\infty, 2]$

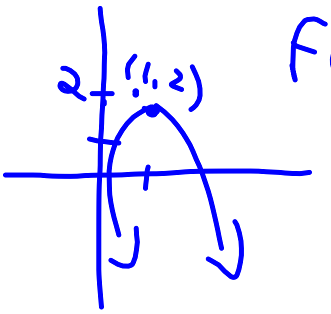


-5

$F(x) = -5(x^2 - 2x + 1) - 3 + 5$

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

$V(1, 2)$



Check for Understanding...

Select the best response for each of the following:

1. Find the domain of $f(x) = \sqrt{2x+3}$.

a) $[0, \infty)$ b) $(0, \infty)$ c) $[-\frac{3}{2}, \infty)$

d) $(-\frac{3}{2}, \infty)$ e) $[0, \frac{3}{2})$

2. Find the range of the function $y = \dfrac{1}{x-3}$.

a) $(3, \infty)$ b) $(-\infty, 3)$

c) $(-\infty, \frac{1}{3}),\ (\frac{1}{3}, \infty)$ d) $(-\infty, 3),\ (3, \infty)$

e) $(-\infty, 0),\ (0, \infty)$

3. If $f(x) = 2x^3 + Ax^2 + Bx - 5$ and if $f(2) = 3$ and $f(-2) = -37$, what is the value of $A + B$?

(A) -6 (B) -3 (C) -1 (D) 2

(E) It cannot be determined from the information given.

4. Solve: $x^2 - x > 12$

a) $x < -6$ or $x > 1$ b) $x < -3$ or $x > 4$

c) $x < -2$ or $x > 3$ d) $-6 < x < 1$

e) $-2 < x < 3$

5. Given that $f(x) = 7x - 5$ and $g(x) = -x^2 - 3x + 5$, determine and expression in simplest form to represent $f(2 - h + 3h^2)$+$4g(3h + 1)$

1. Find the domain of $f(x) = \sqrt{2x+3}$.

a) $[0, \infty)$ b) $(0, \infty)$ c) $[-\frac{3}{2}, \infty)$
d) $(-\frac{3}{2}, \infty)$ e) $[0, \frac{3}{2})$

Can NOT have a negative below sq. Root....

$2x+3 \geq 0$

$2x \geq -3$

$x \geq -\frac{3}{2}$

2. Find the range of the function $y = \frac{1}{x-3}$.

a) $(3, \infty)$ b) $(-\infty, 3)$
c) $(-\infty, \frac{1}{3}), (\frac{1}{3}, \infty)$ d) $(-\infty, 3), (3, \infty)$
e) $(-\infty, 0), (0, \infty)$

D: $x \neq 3$

$1 \div \# \neq 0$

3. If $f(x) = 2x^3 + Ax^2 + Bx - 5$ and if $f(2) = 3$ and $f(-2) = -37$, what is the value of $A + B$?

(A) -6 (B) -3 (C) -1 (D) 2

(E) It cannot be determined from the information given.

$x = 2, y = 3$

$3 = 2(2)^3 + A(2)^2 + B(2) - 5$

$3 = 16 + 4A + 2B - 5$

$\boxed{4A + 2B = -8}$

$x = -2, y = -37$

$-37 = 2(-2)^3 + A(-2)^2 + B(-2) - 5$

$-37 = -16 + 4A - 2B - 5$

$\boxed{-16 = 4A - 2B}$

$$\oplus \begin{cases} 4A + 2B = -8 \\ 4A - 2B = -16 \end{cases}$$

$$\frac{8A}{8} = \frac{-24}{8}$$

$A = -3$

$4(-3) + 2B = -8$

$-12 + 2B = -8$

$$\frac{2B}{2} = \frac{4}{2}$$

$B = 2$

$A + B$

$-3 + 2 = -1$

4. Solve: $x^2 - x > 12$

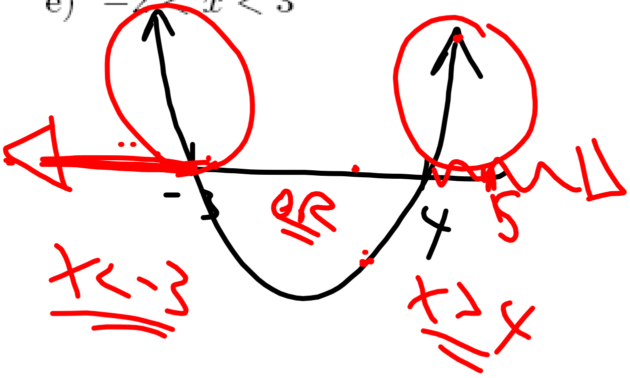
sketch

$\underbrace{x^2 - x - 12}_{\text{Find the zeros}} > 0$

a) $x < -6$ or $x > 1$ b) $x < -3$ or $x > 4$

c) $x < -2$ or $x > 3$ d) $-6 < x < 1$

e) $-2 < x < 3$



$x^2 - x - 12 = 0$

$(x-4)(x+3) = 0$

$x = 4, -3$

5. Given that $f(x) = 7x - 5$ and $g(x) = -x^2 - 3x + 5$, determine and expression in simplest form to represent $f(2 - h + 3h^2)$+4$g(3h + 1)$

$f(\omega) = 7\omega - 1$

$f(3) = 7(3) - 1$

$f(\triangle) = 7(\triangle) - 1$

$f(\text{donkey}) = 7(\text{donkey}) - 1$

$f(3\omega^2 + 2) = 7(3\omega^2 + 2) - 1$

Attachments

- 4.1 Page 206 Questions.pdf
- Introductory worksheet.doc
- Worksheet - Simplifying Radicals (Square Roots).pdf