Chapter 5 - Review Answers

Solve by Factoring

$$x^2+3x-18=0$$

$$(x+6)(x-3)=0$$

$$x=-6,\ x=3$$

$$3x^2-75=0$$

$$3(x^2-25)=0$$

$$3(x+5)(x-5)=0$$

$$x=-5,\ x=5$$

$$2x^2+5x=3$$

$$2x^2+5x-3=0$$

$$(2x-1)(x+3)=0$$

$$2x-1=0 \qquad x+3=0$$

$$x=1/2 \qquad x=-3$$

Solve using Quadratic Formula

$$3x^2-x+2=0$$

$a=3$

$b=-1$

$c=2$

$$x=\frac{-(-1)\pm\sqrt{(-1)^2-4(3)(2)}}{2(3)}$$

$$=\frac{1\pm\sqrt{1-24}}{6}=\frac{1\pm\sqrt{-23}}{6}=\frac{1\pm i\sqrt{23}}{6}$$

Solve by Square Root Property

$x^2 + 12x + 36 = 25$

$(x+6)^2 = 25$

$x+6 = \pm 5$

$x = -6 \pm 5$

$x = -6+5$ $\quad$ $x = -1$

$x = -6-5$ $\quad$ $x = -11$

Simplify

$(4-i)(2+3i)$

$8 + 12i - 2i - 3i^2$

$8 + 10i - 3(-1)$

$11 + 10i$

$(2-2i)^2$

$(2-2i)(2-2i)$

$4 - 4i - 4i + 4i^2$

$4 - 8i + 4(-1)$

$-8i$

$\frac{3-2i}{2+i} \cdot \frac{2-i}{2-i}$ $\quad$ $\frac{6-3i-4i+2i^2}{4-2i+2i-i^2}$ $\quad$ $= \frac{6-7i+2(-1)}{4-(-1)}$ $\quad$ $= \frac{4-7i}{5}$

$\frac{2+i}{3-i} \cdot \frac{3+i}{3+i}$ $\quad$ $\frac{6+2i+3i+i^2}{9-i^2}$ $\quad$ $= \frac{6+5i+(-1)}{9-(-1)}$ $\quad$ $= \frac{5+5i}{10}$ $\quad$ $= \frac{1+i}{2}$

$f(x) = -x^2 - 3x + 10$

$\frac{-b}{2a}$

Vertex: $(\frac{3}{-2}, 12\frac{1}{4})$

AOS: $x = -3/2$

y-int: 10

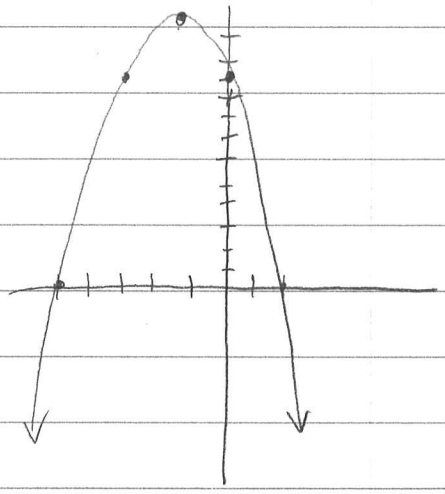
Direction: Concave Down

Min/Max: Max $12\frac{1}{4}$

Zeros: $x = -5, 2$

D: All Reals

R: $y \leq 12.25$



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

$\frac{-b}{2a}$

Vertex: $(1.25, -1.125)$

AOS: $x = 1.25$

y-int: 2

Direction: Concave Up

Min/Max: Min -1.125

Zeros: $x = 0.5, 2$

D: All Reals

R: $y \geq -1.125$