1.

$$x^2 - x - 20 > 0$$
$$(x-5)(x+4) > 0$$
$$x-5=0 \quad x+4=0$$
$$x=5 \qquad x=-4$$
$$answer: (-\infty,-4) \cup (5,\infty)$$

2.

VA:

$$x^2 - 14x + 40 = 0$$
$$(x-4)(x-10) = 0$$
$$x-4=0 \quad x-10=0$$
$$x=4 \qquad x=10$$

HA:

None

SA:

$$\begin{array}{r} x+9 \\ x^2-14x+40 \overline{)\, x^3-5x^2+3x-8} \\ x^3-14x^2+40x \\ \hline 9x^2-37x-8 \\ 9x^2-126x+360 \\ \hline 89x-368 \end{array}$$

$$SA: y = x + 9$$

3.

$f(x) = x^2 - 8x + 3$

$vertex:$

$\frac{-b}{2a} = \frac{-(-8)}{2(1)} = \frac{8}{2} = 4$

$f(4) = 4^2 - 8(4) + 3 = -13$

$vertex = (4,-13)$

$aos: x = 4$

$\min: -13$

4.

$x = 1, x = 1, x = \pm 8i$

5.

$x = -6, x = 5/6, x = 2$

6.

$x = 4, x = -1 \pm \sqrt{2}$

7.

$x = 1, x = -1, x = \pm 5i$

8.

$x = 1, x = 7, x = \pm\sqrt{3}$

9.

$x = 6, x = \pm\sqrt{7}$

10.

$x = 4, x = \pm i$