Station One

Team Number _____

Factor: $x^4 + 9x^3 - x - 9$

$x^3(x+9) - 1(x+9)$

$(x^3 - 1)(x+9)$

$(x-1)(x^2+x+1)(x+9)$

Station Two

Team Number _____

Find all roots: [illegible]

$x^3 - 8x^2 - 6x - 27$

$9, \frac{-1 \pm i\sqrt{11}}{2}$

Station Three

Team Number _____

Solve: $2x^2 + 3x = 8$

$\frac{-3 \pm \sqrt{9 - 4(2)(-8)}}{2(2)}$

$\frac{-3 \pm \sqrt{73}}{4}$

Station Four

Team Number _____

Focus of $y = -\frac{1}{60}x^2 - 7$

$\frac{1}{4(\frac{1}{60})}$

$(0, -7)$

$(0, -22)$

Station Five

Team Number _____

Directrix of $y = 4x^2 + 16x + 13$

$4(x^2 + 4x + 4 - 4) + 13$

$4(4)$ $\frac{1}{16}$ $4((x+2)^2 - 4) + 13$ $\frac{16}{13}$ $\frac{}{29}$

$4(x+2)^2 - 3$

$y = -3\frac{1}{16}$

V $(-2, -3)$

$-2, 29$

Station Six

Team Number _____

General Form of an equation with a root at $4 - 2i$ and a scale factor of 1.

	x	-4	$2i$
x			
-4		16	
$-2i$			4

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

$x^2 - 8x + 20$

Station Seven

Team Number _____

Factor: $216x^4 - 258x^3 - 210x^2$

$6x^2(9x+5)(4x-7)$

$6x^2(36x^2 - 43x - 35)$

$-\frac{5}{9}$ $\frac{7}{4}$ 1.75

$\frac{43 \pm 83}{2(36)}$