① GRAPHING QUADRATIC FUNCTIONS

Graph $y = -2(x+1)^2 + 3$. State the important characteristics.

② SOLVING QUADRATICS

1. $x^2 = 12x + 14$

2. $-3x^2 + 2x - 1 = 0$

③ SOLVING QUADRATICS PART 2

1. $3x^2 + 18x = -60$

2. $0 = 18x^2 - 50$

④ SOLVING QUADRATICS PART 3

Solve:

1. $5 + 4(x + 3)^2 = 4$

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

⑤ COMPLEX NUMBERS

Simplify:

1. $(2 - 5i)(6 + i)$

2. $(-3 + i) - (9 - 2i)$

3. $\frac{4+9i}{2-2i}$

4. $(6 + i) + (4 - 3i)$

5. $\frac{1}{4i}$

⑥ GRAPHING PART 2

Graph $f(x) = \frac{1}{3}(x-5)(x+1)$. State the important characteristics.

⑦ GRAPHING PART 3

Graph $f(x) = 2x^2 + 8x + 1$. State the important characteristics.

⑧ MODELING DROPPED AND LAUNCHED OBJECTS

(round your answers to the nearest 10^{th})

1. Find the time it takes for an object to hit the ground that is dropped from a height of 500 feet.

2. An object is launched upward at a velocity of 32 ft/s from a height of 266 feet. When is it 10 feet from the ground.

⑨ FIND THE ERROR

Explain the error that was made in each problem, then find the correct answer:

1. Write in standard form: $\frac{5}{10+2i}$

$$\frac{5}{10+2i} \times \frac{(10-2i)}{(10-2i)}$$

$$= \frac{50-10i}{100-2i^2}$$

$$= \frac{50-10i}{100+2}$$

$$= \frac{50-10i}{102}$$

$$= \frac{25}{51} - \frac{5}{51}i$$

2. Find the zeros of the function

$$y = 2(x+2)^2 - 72$$

$$y = 2(x+2)^2 - 72$$

$$0 = 2(x+2)^2 - 72$$

$$72 = 2(x+2)^2$$

$$36 = (x+2)^2$$

$$6 = (x+2)$$

$$x = 4$$