

Show all necessary steps clearly, neatly, systematically to receive full credit.

1. (2 pts) Multiply:  $(7-2i)(3+i)$ .

4. (5 pts) Divide:  $\frac{2-3i}{2+3i}$ .

2. (2 pts) Find domain of  $g(x) = \sqrt[3]{2x-7}$ .

3. (2 pts) Multiply:  $(2\sqrt{k} + 5\sqrt{m})(\sqrt{k} - 4\sqrt{m})$ .

5. (5 pts) Find domain of  $f(x) = \sqrt{4-3x} + 5$ .

6. (5 pts) Solve:  $2(2x-5)^2 + 5 = 15$ .

8. (5 pts) Add:

$$-3\sqrt[3]{24x^4y^8} + xy\sqrt[3]{-81xy^5} - 4y\sqrt[3]{3x^4y^5}$$

7. (5 pts) Solve:  $\sqrt{5-x} - 1 = x$ .

9. (5 pts) Rationalize the denominator:

$$\frac{3\sqrt{x}}{\sqrt{x} - 2\sqrt{y}}$$

10. (5 pts) Solve by quadratic formula:  $26r - 2 = 3r^2$ .

11. (7 pts) Let  $f(x) = x^2 + 10x + 23$ .

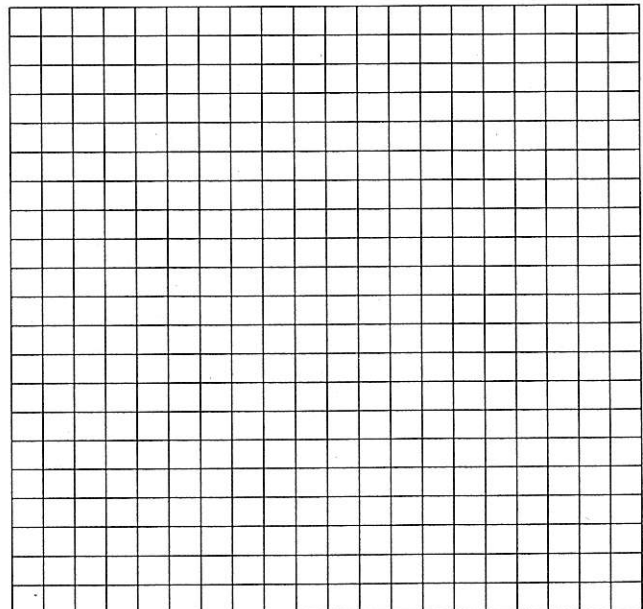
a. Find the vertex.

d. Find maximum or minimum function value.

b. Write in  $f(x) = a(x-h)^2 + k$ .

c. Find the axis of symmetry.

e. Sketch.



12. (7 pts) Solve by completing the square method:  $2x^2 - 16x + 2 = 0$ .

13. (7 pts) Solve:  $3x^{\frac{2}{3}} - x^{\frac{1}{3}} - 24 = 0$ .

