Math 10C   Name: _____

       Review #1   Date: _____

Show all your work for full marks.

1.   Which of these numbers is irrational? Mark as either Q or Q above each radical or number. (2 marks)

$$\sqrt{48}, \quad \sqrt[3]{216}, \quad \sqrt{\frac{49}{16}}, \quad -68, \quad \sqrt[3]{51}$$

2. Write each radical in simplest form. (1 mark each)

a. $\sqrt{108}$

b. $\sqrt[3]{384}$

3. Write each mixed radical to an entire radical. (1 mark each)

a. $3\sqrt[3]{4}$

b. $6\sqrt{5}$

4. Evaluate and show the steps. (2 marks each)
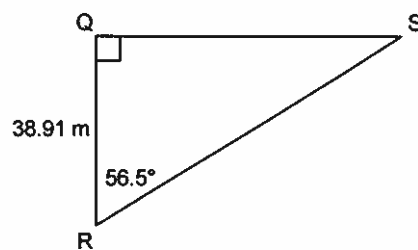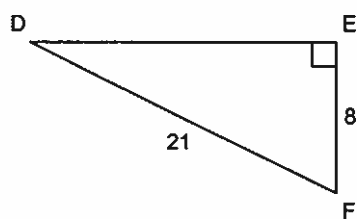
a. $\left(\dfrac{2}{3}\right)^{-3}$.

b. $(-64)^{\frac{2}{3}}$

5. Simplify. Write using powers with positive exponents.

a. $\dfrac{12p^3q^{-7}}{15pq^6}$

b. $(6x^4y^7)(2x^{-5}yz^2)$

6. Solve the following triangles for all missing sides and angles. (10 marks)

7. Expand the following: (10 marks)

a. $(9x+1)(-5x+3)$

b. $3(2x+1)(x-10)$

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

d. $(2x+3)(x-9)-(4x+5)(2x-1)$

e. $(2x+3)^2$

8. Factor the following: (11 marks)

    a. $x^2 - 13x + 12$

    b. $x^2 - 2x - 24$

    c. $4x^2y^5 - 16xy^3 + 8x^4y^2$
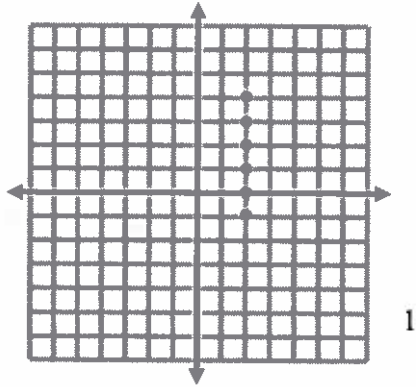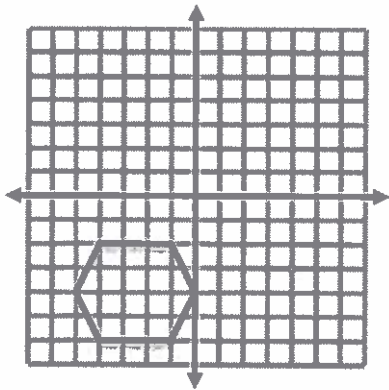
    d. $15x^3 - 20x^2 - 30x$

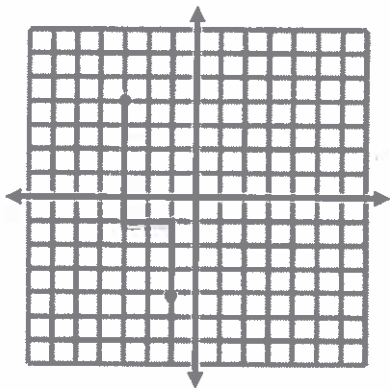   e). $4x^2 + 4x - 24$

    f. $9c^2 - 12c + 4$

    g. $36x^2 - 49$

9. Write the **domain** and **range** for each graph and state whether it is a **function**. (3 marks each)

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10. Given the $f(x) = 2x - 1$, determine the following: (2 marks each)

a. $f(-4)$

b. $f(0)$

c. $f(x) = 0$

d. $f(x) = 9$