Christ the King Diocesian HIgh School

Calculus

Summer Math Packet

This packet will help you review basic algebra concepts.

- Please show all your work. No work No Credit!!!

  (if you need more room use loose leaf paper to do your work and

  staple it to the corresponding worksheet)

- Do not wait to do all of the worksheets at one time.

- This packet will be due on August 16, 2024

Multi-Step Equations

Solve each equation.

1) $-198 = 6(1 + 7a) - 8a$

2) $-112 = 7(2n - 6)$

3) $-400 = 8(7m + 6)$

4) $72 = 6(-1 - 4x) + 7(6 + 6x)$

5) $-28 = 6(b + 7) - 8(7 + b)$

6) $7(3 - 2x) + 2 = -31 + 4x$

7) $4(6b + 5) = -22 + 3b$

8) $-2 + 4(-8x - 4) = -18 + 2x$

9) $-4x + 7(1 + 8x) = -7(x - 1)$

10) $-m - 2(m - 5) = -2(m + 2)$

Name_____

Solving Quadratic Equations

Solve each equation by factoring.

1) $n^2 = 35 - 2n$

2) $8x = -8x^2 + 160$

3) $9 - 24r = -7r^2$

4) $30 = -47n - 7n^2$

5) $7v^2 - 15 = 16v$

Solve each equation by taking square roots.

6) $4 - 7x^2 = -248$

7) $4 - 7p^2 = -549$

Solve each equation with the quadratic formula.

8) $x^2 - 48 = 2x$

9) $10x^2 = 11 - 10x$

Solve each equation by completing the square.

10) $x^2 + 6x - 68 = 0$

Name_____

Radical Expressions

Simplify.

1) $-\sqrt{6} - \sqrt{54} + 3\sqrt{6}$
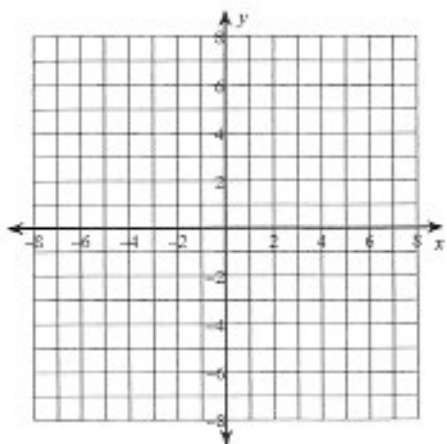
2) $-2\sqrt{3} - 2\sqrt{27} - \sqrt{5}$

3) $-3\sqrt{8} + 3\sqrt{27} - 3\sqrt{18}$
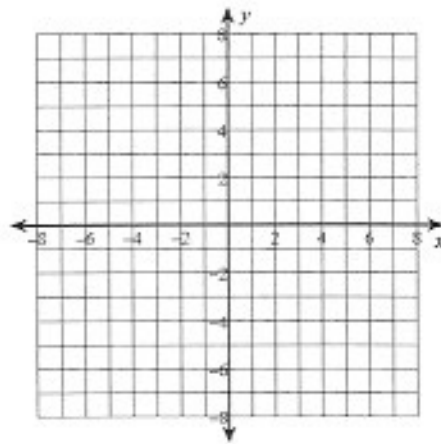
4) $\dfrac{2\sqrt{8}}{\sqrt{9}}$

5) $\dfrac{4\sqrt{12}}{4\sqrt{3}}$

Identify the domain and range of each. Then sketch the graph.

6) $y = \sqrt{x} + 4$

7) $y = -3 + \sqrt{x}$

Name_____

Rational Expressions

Simplify each expression.

1) $\dfrac{x-3}{x^2-x-6}$

2) $\dfrac{p-3}{p^2+p-12}$

3) $\dfrac{3}{4n+16} \cdot \dfrac{n^2+7n+12}{3}$

4) $\dfrac{2b}{28b^3+36b^2} \cdot \dfrac{28b^3+36b^2}{b+5}$

5) $\dfrac{x+9}{9} \cdot \dfrac{9x+45}{x+5}$

6) $\dfrac{9}{9m+81} \div \dfrac{9}{9m+81}$

7) $\dfrac{2}{14x-14} \div \dfrac{10}{56x-56}$

8) $\dfrac{1}{k-9} \div \dfrac{9}{9k+81}$

9) $\dfrac{x-3}{2x^3+2x^2-40x} - \dfrac{4x}{2}$

10) $\dfrac{2p}{2p^2+10p-12} - \dfrac{5p}{2}$