Today's Plan:

Learning Target (standard): I will review for the semester exam.

Students will: Complete practice problems over previous concepts at the boards and study for my exam.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuarcy and provide students feedback, describe and provide examples of exam problems.

Assessment: Board work

Differentiation: Students will work at the board, actively engage in practice review concepts with the aid of other students and the teacher.

Merry Christmas!!

* You may use a note card on your exam with any information you choose. You can write on the front and back and fill it with whatever goodies you think will help you! *

Factor.

$$24x^3 + 81y^3$$

$$3(8x^3 + 27y^3)$$

$$3(2x + 3y)(4x^2 - 6xy + 9y^2)$$

Simplify.

$$(\sqrt{5} + \sqrt{3})^2 = (\sqrt{5} + \sqrt{3})(\sqrt{5} + \sqrt{3})$$

$$= \sqrt{5 \cdot 5} + \sqrt{5 \cdot 3} + \sqrt{3 \cdot 5} + \sqrt{3 \cdot 3}$$

$$= 5 + \sqrt{15} + \sqrt{15} + 3$$

$$= 8 + 2\sqrt{15}$$

Simplify.

$$\sqrt{15}(-2\sqrt{5} + \sqrt{2})$$

$$5\,3$$

$$= -2\sqrt{3 \cdot 5 \cdot 5} + \sqrt{2 \cdot 3 \cdot 5}$$

$$= -10\sqrt{3} + \sqrt{30}$$

Simplify.

$$\frac{-2 + 4\sqrt{3}}{3 + 2\sqrt{3}} \cdot \frac{3 - 2\sqrt{3}}{3 - 2\sqrt{3}} = \frac{(-2 + 4\sqrt{3})(3 - 2\sqrt{3})}{(3 + 2\sqrt{3})(3 - 2\sqrt{3})}$$

$$= \frac{-6 + 4\sqrt{3} + 12\sqrt{3} - 8\sqrt{3 \cdot 3}}{9 - 4\sqrt{3 \cdot 3}}$$

$$= \frac{-6 + 4\sqrt{3} + 12\sqrt{3} - 24}{9 - 12}$$

$$= \frac{-30 + 16\sqrt{3}}{-3}$$

$$= \frac{30 - 16\sqrt{3}}{3}$$

Factor.

$$28x^3 + 21x^2 + 12x + 9$$

$\downarrow$

$$7x^2(4x+3) + 3(4x+3)$$

$$(4x+3)(7x^2+3)$$

Factor.

$$6x^2 + 7xy - 90y^2$$

$$-540$$

$$\wedge$$

$$6x^2 + 27xy - 20xy - 90y^2 \qquad 27 - 20 = 7$$

$\downarrow$

$$3x(2x+9y) - 10y(2x+9y)$$

$$(2x+9y)(3x-10y)$$

Factor.

$$4u^2 - 10uv$$

$$2u(2u - 5v)$$

Factor.

$$m^2 - 10mn + 25n^2$$

$$\overset{25}{\wedge}$$

$$-5 + -5 = -10$$

$$m^2 - 5mn - 5mn + 25n^2$$

$$m(m - 5n) - 5n(m - 5n)$$

$$(m - 5n)(m - 5n)$$

$$(m - 5n)^2$$

48) $\left(\sqrt{5}+\sqrt{2}\right)^2 = \left(\sqrt{5}+\sqrt{2}\right)\left(\sqrt{5}+\sqrt{2}\right)$

$= \sqrt{5\cdot5} + \sqrt{2\cdot5} + \sqrt{2\cdot5} \cdot \sqrt{2\cdot2}$

$= 5 + 2\sqrt{10} + 2$

$= 7 + 2\sqrt{10}$

39) $\left[\dfrac{1}{b^2} = \dfrac{2}{b} - \dfrac{3}{b^2}\right]b^2 \qquad \dfrac{2}{b} \cdot \dfrac{b^2}{1}$

$1 = 2b - 3$

$4 = 2b$

$b = 2$

24) $7k^2 - 53k - 24$

$7k^2 + 3k - 56k - 24$

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$3 \quad -56 = -53$

$k(7k+3) - 8(7k+3)$

$(7k+3)(k-8)$