MATH 14 TEST 1
PROF. ALFRED DOLICH
REVIEW

Do the following ten question, each worth 10 points. You may use a scientific calculator, although it is not necessary. Please make sure you show your work and clearly write your final answer.

(1) Simplify:

$$\left(\frac{2x^3}{x^2y}\right)^{-4}$$

(2) (a) Multiply: $(3x+2)\times(-x-4)$
(b) Add: $(5x+1)+(2x-7)$.

(3) Factor completely: $2x^4 - 32$.

(4) subtract

$$\frac{3}{x^2 - 1} - \frac{5x}{x(x-1)}$$

(5) Simplify: $\sqrt[3]{\sqrt{x^{12}}}$

(6) Rationalize the denominator of:

$$\frac{4}{3+\sqrt{5}}$$

(7) Simplify: $\sqrt{72} + 3\sqrt{50}$

(8) Solve: $\frac{2}{x} + \frac{6}{x+2} = \frac{8}{2x}$.

(9) (a) Write in standard form: $\frac{3}{2-5i}$.

(b) Let $z = \sqrt{-10}$, find $Re(z)$ and $Im(z)$.

(10) Solve $2x^2 + 5x = -2$.

(11) Solve:

$$(5x-2)^{\frac{2}{3}} - 5 = 4$$