Practice TEST

1. The expanded form of $(4x - 5)(3x + 1)$ is:

$12x^2+4x-15x-5$

$12x^2-11x-5$

2. The expanded form of $(3x - 5)^2$ is:

$(3x-5)(3x-5)$

$9x^2-15x-15x+25$

$9x^2-30x+25$

3. The dimensions of a rectangular rooftop are $4x + 7$ by $3x + 2$. The area of the rooftop is:

$A=(4x+7)(3x+2)$

$=12x^2+8x+21x+14$

$=12x^2+29x+14$

4. $12x^2 + 6x + 21$ when factored completely is:

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

5. Which expression is NOT a difference of squares.

A $4x^2 - 9$ **B** $36 - x^2$

C $9x^2 - 49$ **D** $x^2 - 8$

6. The dimensions of a rectangle with an area of $x^2 - 6x - 7$ are:

$(x)(x)$ $(1)(-7)$

$(x+1)(x-7)$

$\therefore L=x+1$

$W=x-7$

7. The factored form of $9x^2 - 49$ is:

$(3x+7)(3x-7)$

8. Expand and simplify.

a) $(x - 4)^2$

$(x-4)(x-4)$

$x^2-4x-4x+16$

$x^2-8x+16$

b) $(2x - 9)(3x + 2)$

$6x^2+4x-27x-18$

$6x^2-23x-18$

9. Factor each polynomial completely. (common factor fist)

a) $2x^2 + 16x - 18$

$2(x^2+8x-9)$

$(x)(x)$ $(-1)(9)$ $(3)(3)$

$2(x-1)(x+9)$

b) $3x^2 + 18x - 27$

$3(x^2+6x-9)$

$(x)(x)$ $(1)(9)$ $(3)(3)$

can't do more

c) $4x^2 + 12x - 40$

$4(x^2+3x-10)$

$(x)(x)$ $1,10$ $(2)(5)$

$4(x-2)(x+5)$

d) $15x^2 - 25x + 35$

$5(3x^2-5x+7)$

can't do more

10. Determine the dimensions of each rectangle, given the area.

a) $36x^2 - 12x$

$12x(12x \quad 12x)$

$=12x(3x-1)$

$\therefore L=12x$

$W=3x-1$

b) $27x^2 + 81x$

$27x(27x \quad 27x)$

$=27x(x+3)$

$\therefore L=27x$

$W=x+3$

11. Factor each difference of squares.

a) $x^2 - 196$ **b)** $25 - 4x^2$

$(x+14)(x-14)$ $(5+2x)(5-2x)$

13. Tim wants to carpet his bedroom floor. The floor is $(2x + 3)$ by $(3x + 1)$.

a) Write an expanded quadratic expression that represents the area of the floor.

$6x^2+2x+9x+3$

$6x^2+11x+3$

Extended Response

12. The perimeter of a school yard is 50 m. The area is represented by $x^2 + 3x - 18$. Find the actual dimensions of the school yard

$A=x^2+3x-18$

$x \cdot x$ $\quad 1 \cdot 18$ $\quad 2 \cdot 9$ $\quad -3 \cdot 6$

$A=(x-3)(x+6)$

$w \quad l$

$P=2L+2W$

$50=2(x+6)+2(x-3)$

$50=2x+12+2x-6$

$50=4x+6$

$44=4x$

$11=x$

$\therefore L=x+6 \quad W=x-3$

$=11+6 \quad =11-3$

$=17\text{ m} \quad =8\text{ m}$

b) If $x = 1$ m, what is the area to be carpeted?

$6(1)^2+11(1)+3$

$6+11+3$

20 m^2

c) The carpet costs \$10/m^2. How much will it cost Tim to carpet his floor?

$20\text{ m}^2 \cdot \$10/\text{m}^2$

\$200