## Practice TEST

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

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:

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

$$= 12x^2 + 8x + 212 + 14$$

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

 $= 12 x^2 + 29 x + 14$ 4.  $12x^2 + 6x + 21$  when factored completely is:

5. Which expression is NOT a difference of squares.

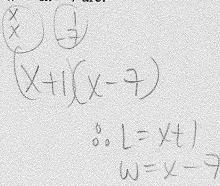
**A** 
$$4x^2 - 9$$

**B** 
$$36 - x^2$$

$$C 9x^2 - 49$$

$$(\mathbf{D}^2)^2 - 8$$

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



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

**8.** Expand and simplify.

a) 
$$(x-4)^2$$

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

$$(x-4)(x-4)$$
  $6x^2+4x-27x-18$   
 $x^2-4x-4x+16$   $6x^2-23x-18$ 

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

a) 
$$(2x^2 + 16x - 18)$$
 2 b)  $(3x^2 + 18x - 27)$  3 3 3 3

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

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

$$= 2(x^{2}+8x-9) = 3(x^{2}+6x-9)$$

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

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

$$= 3(x^{2}+6x-9)$$

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

c) 
$$4x^2 + 12x - 40$$
 d)  $15x^2 - 25x + 35$ 

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

$$=4(x^{2}+3x-10)=5(3x^{2}-5x+7)$$

$$=4(x^{2}+3x-10)=5(3x^{2}-5x+7)$$

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

a) 
$$36x^2 - 12x$$
 b)  $27x^2 + 81x$   $27x$   $27x$ 

b) 
$$27x^2 + 81x$$
  
 $27x \rightarrow 27x$ 

$$=12x(3x-1)=27x(x+3)$$

$$=27\times(x+3)$$

11. Factor each difference of squares.

a) 
$$x^2 - 196$$

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

## **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

$$A = x^2 + 3x - 18$$
 $\begin{pmatrix} x \\ x \end{pmatrix} = \begin{pmatrix} x^2 + 3 \\ 18 & 9 \end{pmatrix} \begin{pmatrix} 3 \\ 6 \end{pmatrix}$ 
 $A = \begin{pmatrix} x - 3 \\ 4 \end{pmatrix} \begin{pmatrix} x + 6 \\ 4 \end{pmatrix}$ 

$$P = 2L + dw$$

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

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

$$50 = 4x+6$$

$$44 = 4x$$

$$11 = x$$

- 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.

$$6x^{2}+2x+9x+3$$
  
 $6x^{2}+11x+3$ 

**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<sup>2</sup>. How much will it cost Tim to carpet his floor?