

Name: Key Date: \_\_\_\_\_

**Unit 4 Review**

**Add**

1.  $(2x^2 - x - 6) - (7x^2 - 8x - 4)$   
 $\boxed{-5x^2 + 7x - 2}$

2.  $(2x^2 - x - 6) + (7x^2 - 8x - 4)$   
 $\boxed{9x^2 - 9x - 10}$

**Multiply**

1.  $2x^2(3x^3 + 5x^2 - 9x)$

$\boxed{6x^5 + 10x^4 - 18x^3}$

2.  $(5x - 6)(9x - 3)$

$45x^2 - 15x - 54x + 18$

$\boxed{45x^2 - 69x + 18}$

**Multiply**

3.  $7x^2(8x^4 + 2)$

$\boxed{56x^6 + 14x^2}$

4.  $(x+6)^2$

$(x+6)(x+6)$   
 $x^2 + 6x + 6x + 36$

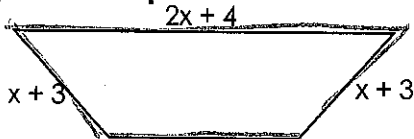
$\boxed{x^2 + 12x + 36}$

5.  $(x-9)(x+5)$

$x^2 + 5x - 9x - 45$

$\boxed{x^2 - 4x - 45}$

6. Find the perimeter



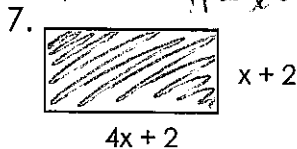
$(2x+4) + (x+3) + (x+3) + 10$

$2x+4 + x+3 + x+3 + 10$

Perimeter = length of all sides

$4x + 20$

Find the area.  $A = l \cdot w$



$(x+2)(4x+2)$

$4x^2 + 8x + 2x + 4$

$\boxed{4x^2 + 10x + 4}$

Factor each of the following expressions. Remember to GCF first!

10.  $6x^3 + 15x^2$   
 GCF ONLY  $\boxed{3x^2(2x+5)}$

11.  $8x^4 + 12x^3 - 16x^2$   
 GCF ONLY  $\boxed{4x^2(2x^2 + 3x - 4)}$

12.  $x^2 + 9x + 18$

$\boxed{(x+3)(x+6)}$



13.  $x^2 + 7x - 44$

$\boxed{(x+11)(x-4)}$

14.  $x^2 - 49$

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

15.  $x^2 + 10x + 25$

$(x+5)(x+5)$  or  $(x+5)^2$

16.  $x^2 - 4x - 32$

$(x-8)(x+4)$

17.  $\frac{3x^2}{3} - \frac{24x}{3} + \frac{36}{3}$

$3(x^2 - 8x + 12) = 3(x-6)(x-2)$

18.  $2x^2 + 11x + 5$

$(2x+1)(x+5)$

19.  $4x^2 - 64$

$4(x^2 - 16) = 4(x+4)(x-4)$

20.  $3x^2 + 16x + 21$

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

21.  $5x^2 - 7x - 6$

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

22.  $\frac{4x^2}{2} - \frac{10x}{2} + \frac{6}{2}$

$2(2x^2 - 5x + 3) = 2(2x-3)(x-1)$

23.  $\frac{6x^2}{6} - \frac{18x}{6} - \frac{24}{6}$

$6(x^2 - 3x - 4) = 6(x-4)(x+3)$

24.  $9x^2 - 12x + 4 = (3x-2)(3x-2)$

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

25.  $x^4 - 81$

26. Which value of "b" would make  $x^2 + bx - 48$  **not** factorable: -22, -13, -8, -4 or -2?

$x^2 - 22x - 48$

$(x-24)(x+2)$

$x^2 - 13x - 48$

$(x-16)(x+3)$

$x^2 - 8x - 48$

$(x-12)(x+4)$

$x^2 - 4x - 48$

Not factorable!

$x^2 - 2x - 48$

$(x-8)(x+6)$

27. The area of a rectangle is  $(8x^2 + 8x + 2)$  cm<sup>2</sup>. The width is  $(2x + 1)$  cm. What is the length of the **rectangle**?

$(2x+1)(4x+2)$

28. The area of a square is  $(36d^2 - 36d + 9)$  in<sup>2</sup>. What expression represents the length of a side of the **square**?

$(6d-3)(6d-3)$