

## Practice: Common Factoring

### Assignment 2 Chapter 7

1. Find the greatest common factor of each set of terms.

a) 35, 75      5

b) 21x, 60      3

c) 12, 8x, 16x<sup>2</sup>      4

d) 36, 9x, 18x<sup>2</sup>      9

2. Using the greatest common factor, write the binomial in factored form.

$\frac{4}{4}$  a)  $4x + 20 = 4(x + 5)$

b)  $5x + 30x^2 = 5x(1 + 6x)$

c)  $12x^2 - 48x = 12x(x - 4)$

d)  $21x^2 - 49x = 7x(3x - 7)$

what comes out?

$\textcircled{4} \swarrow \searrow$   
 $4x + 20$

$4(x + 5)$

3. Factor each binomial completely.

a)  $-18x + 33 = -3(9x - 11)$

b)  $20x - 50x^2 = 10x(2 - 5x)$

c)  $-48x^2 - 63x = -3x(16x + 21)$

d)  $-36x^2 - 72x = -36x(x + 2)$

4. Find the greatest common factor.

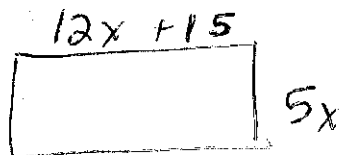
a)  $4x^2 + 12x + 8 = 4(x^2 + 3x + 2)$

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

c)  $5x^2 + 10x - 120 = 5(x^2 + 2x - 24)$

d)  $3x^2 - 36x + 105 = 3(x^2 - 12x + 35)$

5. The area of a tennis court is represented by  $60x^2 + 75x$ . What are the dimensions of the tennis court?

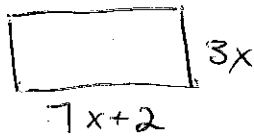


$5x(12x + 15)$

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6. The area of a chalkboard is represented by  $21x^2 + 6x$ . What are the dimensions of chalkboard?



$3x(7x + 2)$

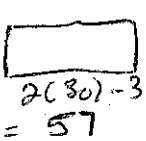
7. Determine the dimensions of each rectangle, given the area.

- a)  $8x^2 - 12x$       b)  $26x^2 + 39x$   
 c)  $24x^2 + 6x$       d)  $44x^2 + 66x$

- a)  $4x(2x - 3)$       b)  $13x(2x + 3)$   
 c)  $6x(4x + 1)$       d)  $22x(2x + 3)$

8. Determine the actual dimensions for each rectangle from question 7, given that  $x = 30$  cm.

$4(30)$   
 $= 120$



a) 120 by 57

b) 390 by 63

c) 180 by 121

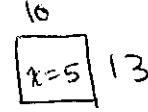
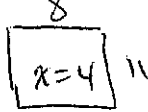
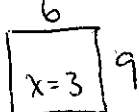
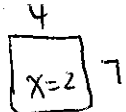
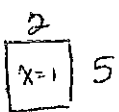
d) 660 by 63

9. Lilly wants to laminate some posters. Suppose the area of one poster is represented by  $4x^2 + 6x$ , where  $x$  is measured in metres.

a) What are the dimensions of the poster?

$2x(2x + 3)$

b) Lilly's collection includes posters of many different sizes. Substitute values for  $x = 1, 2, 3, 4, 5$



10. Mr. Walker owns a large area of land for farming. The area of his land is  $50x^2 + 60x$ . He wants to buy his neighbour's land to increase his farming area. His neighbour's land has an area of  $20x^2 + 30x$ . If Mr. Walker buys the land, he would own a large rectangular area.

a) Write a quadratic expression that represents the total farming area if the 2 pieces of land were joined together.  $50x^2 + 60x + 20x^2 + 30x$

b) Factor the expression and determine the dimensions of the new piece of land.

c) What are the actual dimensions of the land if  $x = 2$  m?

a)  $y = 70x^2 + 90x$

