

**Section 5.3 Practice Master**

1. Use algebra tiles or a diagram to illustrate the factoring of each polynomial.

- a)  $x^2 + 3x$   
 b)  $2x^2 + 10x$   
 c)  $3x^2 + 6x$

2. Factor fully.

- a)  $3x + 6y$   
 b)  $17ac - 34ad$   
 c)  $16x^2y^2 - 24xy$   
 d)  $27x^3y^3 + 18x^2y^2 + 9xy$   
 e)  $6n^2p^2 + 12np^2 + 36n^3p^3$   
 f)  $33c^4d^3e^2 - 11c^2de$   
 g)  $3g^2 + 6g + 9$

3. Factor fully.

- a)  $2x(x + 7) + 3(x + 7)$   
 b)  $a(b - 7) + 2(b - 7)$   
 c)  $4s(r + u) - 3(r + u)$   
 d)  $y(x + s) + z(x + s)$

4. Factor by grouping.

- a)  $ax + ay + 3x + 3y$   
 b)  $4x^2 + 6xy + 12y + 8x$   
 c)  $y^2 + 3y + ay + 3a$   
 d)  $25x^2 + 5x + 15xy + 3y$

5. The formula for the surface area of a rectangular prism is  $SA = 2lw + 2lh + 2wh$ .

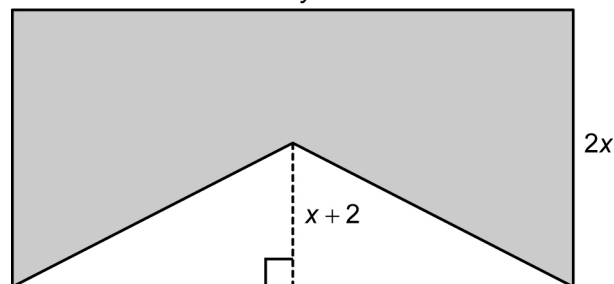
- a) Write this formula in factored form.  
 b) If  $l$  is 10 cm,  $w$  is 5 cm, and  $h$  is 8 cm, find the surface area using both the original formula and the factored form. What do you notice? Explain why this is so.

6. Factor.

- a)  $3x(6 - y) + 2(y - 6)$   
 b)  $2y(x - 3) + 4z(3 - x)$

7. Write an expression in factored form for the area of each shaded region.

- a)  $5xy$



- b)

