

Mathematics 1201

Unit Review

Factoring

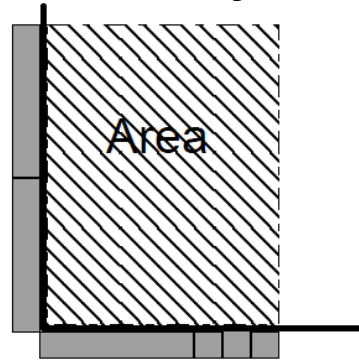
Sections (3.3 – 3.8)

1. What is the greatest common factor in the trinomial $12a^3b^2 + 20a^2b + 16a^4b^3$? 1. _____

- (A) 4 (B) $4ab$ (C) $4a^2b$ (D) $4a^4b^3$

2. In the diagram, algebra tiles are used to help model the product. Which polynomial represents the area modeled? (Shaded tiles are positive) 2. _____

- (A) $x^2 + 3x$
 (B) $x^2 + 6x$
 (C) $2x^2 + 3x$
 (D) $2x^2 + 6x$

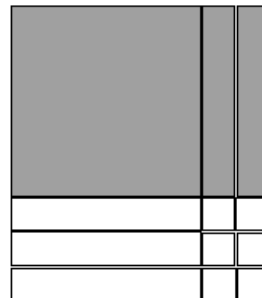


3. Expand: $(5d + 6)(4d - 3)$ 3. _____

- (A) $20d^2 - 39d - 18$ (B) $20d^2 - 9d - 18$
 (C) $20d^2 + 9d - 18$ (D) $20d^2 + 39d - 18$

4. A polynomial is represented by the tiles shown below. What are the factors of the polynomial? (Shaded tiles are positive, unshaded tiles are negative) 4. _____

- (A) $(x + 2)(x + 3)$
 (B) $(x + 2)(x - 3)$
 (C) $(x - 2)(x + 3)$
 (D) $(x - 2)(x - 3)$



5. Completely factor the binomial $15y^2 - 18y$. 5. _____

- (A) $3(5y^2 - 6y)$ (B) $3y(5y - 6)$
 (C) $y(15y - 18)$ (D) $3y(15y - 18)$

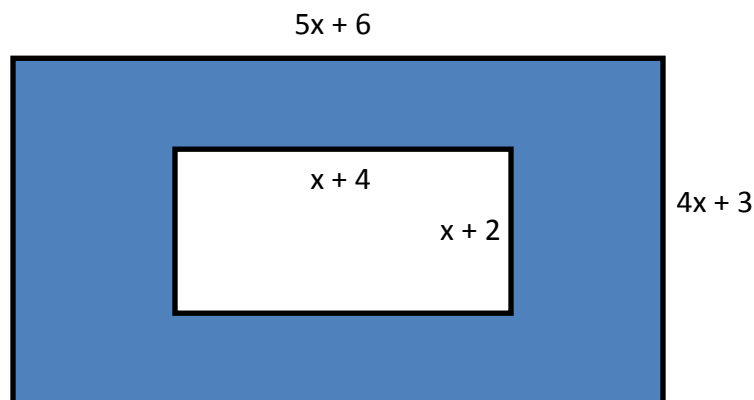
6. The area of a rectangle is $x^2 - 2x - 24$. What are the dimensions of the rectangle? 6. _____

- (A) $(x - 4)$ by $(x - 6)$ (B) $(x - 4)$ by $(x + 6)$
 (C) $(x + 4)$ by $(x - 6)$ (D) $(x + 4)$ by $(x + 6)$

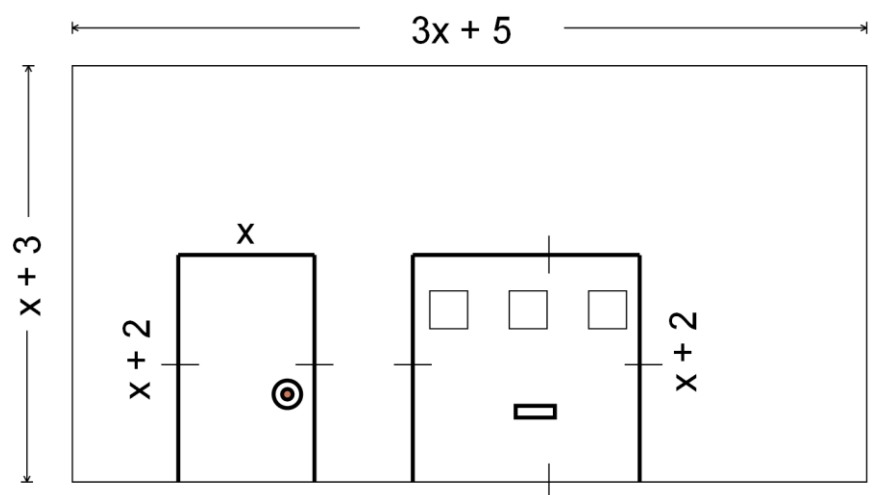
7. Factor: $x^2 - 16$. 7. _____

- (A) $(x - 4)^2$ (B) $(x + 4)^2$
 (C) $(x - 4)(x + 4)$ (D) $(x - 2)(x + 2)(x + 4)$

8. What are the correct factors of $36 - 5x - x^2$? 8. ____
- (A) $(9 - x)(4 + x)$ (B) $(9 - x)(4 - x)$
 (C) $(9 + x)(4 - x)$ (D) $(x - 9)(x + 4)$
9. What are the factors of $10x^2 + 3x - 1$ 9. ____
- (A) $(5x - 1)(2x - 1)$ (B) $(5x - 1)(2x + 1)$
 (C) $(5x + 1)(2x - 1)$ (D) $(5x + 1)(2x + 1)$
10. Which represents a perfect square trinomial? 10. ____
- (A) $4x^2 + 10x + 25$ (B) $9x^2 + 24x + 16$
 (C) $36 - 9x + x^2$ (D) $x^2 + xy + y^2$
11. Expand and simplify:
- (a) $(4x - 5y)^2$ (b) $(x - 2)(x^2 + 2x + 4)$
 (c) $3x(2x - 3)^2 - 5(x + 2)(x - 2)$
12. Determine the area of the shaded region in expanded form.



13. You plan to put siding on the front of your garage pictured below. Find an expression (in simplest form) to represent the area of the surface to be covered with siding. (Note: There will be **NO** siding on the two doors.)



14. Factor completely each of the following expressions.

(a) $12 + x - x^2$

(b) $2p^3 - 12p^2 + 16p$

(c) $8x^2 - 10x - 3$

(d) $63x^2 - 33x - 6$

(e) $49y^2 - 81$

(f) $25p^2 - 30p + 9$

(g) $10a^2 + 11ab - 6b^2$

(h) $200x^2 - 18$

(i) $16u^2 + 20u - 6$

(j) $w^2 - 3w - 28$

(k) $-18x^3 - 15x^2 + 18x$

(l) $3y^2 - 9y - 30$

Review Problems from textbook:

P.198 – P.200

#11(f), #12(e), #18(g), #19(b), (d), (f), #24(c), #25(b), (d), (f)

#32, #33(a), (c), (e), #34

ANSWERS:

1. C 2. D 3. C 4. B 5. B 6. C 7. C 8. C 9. B 10. B

11(a) $16x^2 - 40xy + 25y^2$

(b) $x^3 - 8$

(c) $12x^3 - 41x^2 + 27x + 20$

12. $19x^2 + 33x + 10$

13. $x^2 + 8x + 11$

14.(a) $(3 + x)(4 - x)$
or $-(x + 3)(x - 4)$

(b) $2p(p - 4)(p - 2)$

(c) $(4x + 1)(2x - 3)$

(d) $3(7x + 1)(3x - 2)$

(e) $(7y - 9)(7y + 9)$

(f) $(5p - 3)^2$

(g) $(2a + 3b)(5a - 2b)$

(h) $2(10x - 3)(10x + 3)$

(i) $2(2u + 3)(4u - 1)$

(j) $(w + 4)(w - 7)$

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

(l) $3(y - 5)(y + 2)$