

BLM Answers

BLM 7.GR.1: Get Ready

Polynomials

1. a) -2 b) 5 c) -3 d) 9
2. a) tri b) bi c) mono d) bi

Algebraic Expressions

3. a) $-6a$ b) $16x^2$ c) $-12x^2$
d) $-2r$ e) $4r+3$
4. a) $8a+3a^2$ b) $1+5b+b^2$
c) $6-c-3c^2$ d) x^2+2x+1
5. a) $-5x+35$ b) $-18+4m-6m^2$
c) $3a^2-9$ d) $-6y^2+8y+3$
6. a) -10 b) -9 c) 3 d) 7
7. a) 15x b) 12x c) $4(x+2)$ d) $12x^2$

Number Operations

8. a) 64 b) $64x^2$ c) $36x^2$ d) $100x^2$
9. a) 32 b) 14 c) 0 d) -25

Measurement

10. 175 cm^2

BLM 7.1.1: Multiply Two Binomials

1. a) $x^2+18x+81$ b) $x^2+20x+100$
c) $x^2-14x+49$ d) $x^2-16x+64$
2. a) x^2+3x+2 b) x^2+2x-3
c) $x^2+2x-24$ d) $x^2-12x+35$
3. a) $4x^2+12x+9$ b) $16x^2+40x+25$
c) $9x^2-12x+4$ d) $25x^2-10x+1$
4. a) $12x^2+7x+1$ b) $30x^2+7x-2$
c) $6x^2+x-12$ d) $35x^2-74x+35$
5. a) $x^2+9x+18$ b) $x^2-3x-18$
c) $x^2+3x-18$ d) $x^2-9x+18$
6. $(2x+7)(x+3) = 2x^2+13x+21$
7. a) $(x+5)(3x+1) = 3x^2+16x+5$
b) $2(x+5+3x+1) = 8x+12$
8. a) $(x+1)(4x+1) = 4x^2+5x+1$
b) $16x^2+20x+4$
c) 108 m^2
d) \$54
9. a) $(2x+3)(3x+2) = 6x^2+13x+6$
b) 56 m^2
c) \$14
10. a) $(3x+1)^2 - (2x+1)^2$
b) 135 cm^2

BLM 7.2.1: Common Factoring

1. a) 5 b) 3 c) 4 d) 9
2. a) $4(x+5)$ b) $5x(1+6x)$
c) $12x(x-4)$ d) $7x(3x-7)$
3. a) $-3(6x+11)$ b) $10x(2-5x)$
c) $-3x(16x+21)$ d) $-36x(x+2)$
4. a) $4(x^2+3x+2)$ b) $3(x^2+2x-3)$
c) $5(x^2+2x-24)$ d) $3(x^2-12x+35)$
5. 15x by $(4x+5)$
6. 3x by $(7x+2)$
7. a) 4x by $(2x-3)$ b) 13x by $(2x+3)$
c) 6x by $(4x+1)$ d) 22x by $(2x+3)$
8. a) 120 by 57 b) 390 by 63
c) 180 by 121 d) 660 by 63
9. a) 2x by $(2x+3)$
b) 2 by 5, 4 by 7, 6 by 9, 8 by 11, 10 by 13
10. a) $50x^2+60x+20x^2+30x = 70x^2+90x$
b) 10x by $(7x+9)$
c) 20 m by 23 m

BLM 7.3.1: Factor a Difference of Squares

1. a) 8 b) 13 c) 11 d) 12
2. a) 2^2 b) 3^2 c) 15^2 d) 100^2
3. a) no b) yes c) yes d) no
4. a) $(x-5)(x+5)$ b) $(8-2x)(8+2x)$
c) $(3x-9)(3x+9)$ d) $(3x-7)(3x+7)$
5. a) $4x^2-9$ b) $(2x-3)$ by $(2x+3)$
c) 3 m by 9 m
6. a) $(x-12)$ by $(x+12)$ b) 88 cm by 112 cm
7. a) $(x-4)$ by $(x+4)$ b) 76 cm by 84 cm
8. $x^2-4 = (x-2)(x+2)$
9. a) $9x^2-16$ b) $(3x-4)$ by $(3x+4)$
c) 5 m by 13 m
10. a) $16x^2-4$ b) $(4x-2)(4x+2)$

BLM 7.4.1: Factor Trinomials of the Form x^2+bx+c

1. a) 8, 10 b) 9, 3 c) 9, 4 d) 8, 4
2. a) -5, -2 b) -8, 5 c) -7, -5 d) -8, -3
3. a) $(x+6)(x-2)$ b) $(x+5)(x+3)$
c) $(x-8)(x+2)$ d) $(x-7)(x+2)$
4. a) $(x-4)(x+1)$ b) $(x+6)(x-4)$
c) $(x-7)(x+3)$ d) $(x+5)(x+2)$
5. a) $(x-5)$ by $(x-3)$ b) 95 cm by 97 cm
6. a) $(x+8)$ by $(x-2)$ b) 88 cm by 78 cm
7. a) $(x+6)$ by $(x-3)$ b) 81 cm by 72 cm
8. a) $(x-5)(x+4)$ b) 5 m by 14 m
9. a) $(x+7)(x+3)$ b) 11 m by 7 m
10. 12 m by 3 m

BLM Answers

BLM 7.CR.1: Chapter Review

7.1 Multiply Two Binomials

- a) $x^2 + 22x + 121$ b) $25x^2 + 40x + 16$
c) $4x^2 - 20x + 25$ d) $x^2 - 24x + 144$
- a) $x^2 + 7x + 10$ b) $10x^2 + 21x - 10$
c) $12x^2 - x - 6$ d) $x^2 - 10x + 24$
- $2x^2 + 13x + 21$
- a) $4x^2 + 14x + 6$ b) 24 m^2 c) $\$6$

7.2 Common Factoring

- a) $5(x + 8)$ b) $6x(1 + 5x)$
c) $24x(x - 2)$ d) $7x(9x - 7)$
- a) $3(x^2 + 4x + 6)$ b) $2(x^2 + 3x - 4)$
c) $4(x^2 + 3x - 10)$ d) $5(x^2 - 2x + 3)$
- a) $3x$ by $(4x - 1)$ b) $20x$ by $(x + 3)$
c) $11x$ by $(x + 5)$ d) $3x$ by $(x + 14)$

7.3 Factor a Difference of Squares

- a) $(x + 11)(x - 11)$ b) $(10 + 2x)(10 - 2x)$
c) $(2x - 4)(2x + 4)$ d) $(3x - 5)(3x + 5)$
- a) $4x^2 - 4$ b) $(2x - 2)$ by $(2x + 2)$
c) 2 m by 6 m

7.4 Factor Trinomials of the Form $x^2 + bx + c$

- a) $(x - 10)(x - 10)$ b) $(x + 15)(x + 1)$
c) $(x - 9)(x - 4)$ d) $(x - 10)(x + 2)$
- a) $(x - 5)(x - 8)$ b) $(x - 8)(x + 2)$
c) $(x + 7)(x - 3)$ d) $(x + 6)(x + 2)$
- a) $(x - 10)$ by $(x + 5)$ b) 90 cm by 105 cm

BLM 7.PT.1: Chapter 7 Practice Test

Multiple Choice

- A
- C
- B
- B
- D
- D
- D

Short Response

- a) $x^2 + 26x + 169$ b) $x^2 - 8x + 16$
c) $9x^2 + 9x - 4$ d) $6x^2 - 23x - 18$
- a) $2(x^2 + 8x + 9)$ b) $3(x^2 + 6x - 9)$
c) $4(x + 5)(x - 2)$ d) $5(3x^2 - 5x + 7)$
- a) $12x$ by $(3x - 1)$ b) $27x$ by $(x + 3)$
- a) $(x - 13)(x + 13)$ b) $(5 - 2x)(5 + 2x)$
c) $(3x - 10)(3x + 10)$ d) $(4x - 7)(4x + 7)$
- a) $(x - 10)$ by $(x + 9)$ b) $(x - 4)$ by $(x - 2)$

Extend

- a) $6x^2 + 11x + 3$ b) 20 m^2 c) $\$200$
- length is $(x + 6)$ and width is $(x - 3)$ given
perimeter is $50 \text{ m} = 2[(x + 6) + (x - 3)] = 4x + 6$
so $x = 11$
so actual dimensions are 17 m by 8 m

BLM 7.CT.1: Chapter 7 Test

Multiple Choice

- A
- C
- B
- D
- D
- A
- A
- B

Short Response

- a) $x^2 + 28x + 196$ b) $x^2 - 18x + 81$
c) $12x^2 - 3$ d) $8x^2 - 2x - 21$
- a) $2(x^2 + 8x + 4)$ b) $3(x^2 + 4x - 3)$
c) $4(x^2 + 4x - 15)$ d) $5(x^2 - 4x + 5)$
- a) $5x$ by $(2x - 1)$ b) $3x$ by $(3x + 13)$
c) $3x$ by $(2x + 9)$ d) $14x$ by $(x + 4)$
- a) $(x - 15)(x + 15)$ b) $(9 - 5x)(9 + 5x)$
c) $(4x - 10)(4x + 10)$ d) $(3x - 8)(3x + 8)$
- a) $(x - 25)(x + 2)$ b) $(x - 10)(x + 4)$
c) $(x + 6)(x - 4)$ d) $(x + 6)(x + 3)$

Extend

- a) $6x^2 + 5x + 1$ b) 12 square metres
c) $\$60$
- a) $9x^2 - 4$ b) $(3x - 2)(3x + 2)$
c) 13 m by 17 m
- length is $(x + 16)$ and width is $(x - 1)$ given
perimeter is $70 \text{ m} = 2[(x + 16) + (x - 1)] = 4x + 30$
so $x = 10$
so actual dimensions are 26 m by 9 m