

Chapter 1: Factoring Polynomials

Lesson 2: Factoring Trinomials When a is 1

Question #1: Factoring Polynomials

Reference Q.14735

- a. Write the polynomial expression which is represented by the algebra tiles.



- b. Arrange the algebra tiles into a rectangle and write an expression for the length and width of the rectangle.
c. Use the results above to express the polynomial in factored form.

Question #2: Factoring Polynomials

Reference Q.14736

- a. Write a polynomial expression for the group of algebra tiles shown.



- b. Arrange the algebra tiles into a rectangle.
c. State the length and width of the rectangle and hence express the polynomial in factored form.

Question #3: Factoring Polynomials

Reference Q.14737

Use algebra tiles to factor the following trinomials.

- a. $x^2 + 5x + 6$
b. $x^2 + 6x + 5$
c. $x^2 - 6x + 8$

Question #4: Factoring Trinomials

Reference Q.14738

Complete the tables to find two numbers with the given sum and the given product.

	Sum	Product	Integers
a)	5	6	
b)	8	7	
c)	11	30	
d)	-11	30	

	Sum	Product	Integers
e)	11	10	
f)	-8	15	
g)	-15	56	
h)	-18	56	

Question #5: Factoring Trinomials

Reference Q.14739

Complete the following.

- a. $x^2 + 7x + 12 = (x + 3)(x + \quad)$
b. $x^2 + 9x + 8 = (x + \quad)(x + \quad)$
c. $x^2 - 7x + 10 = (x - 2)(x - \quad)$
d. $t^2 - 14t + 24 = (t - \quad)(t - \quad)$
e. $z^2 + 8z + 15 = (z + 5)(\quad)$
f. $b^2 - 12b + 20 = (b - 2)(\quad)$

Question #6: Factor where possible

Reference Q.14744

Factor where possible.

- a. $x^2 + 10x + 16$
b. $x^2 - 11x + 18$
c. $x^2 - 2x - 8$
d. $x^2 + 3x - 18$
e. $x^2 - 4x + 12$
f. $x^2 - 4x - 12$
g. $x^2 - 10x + 25$
h. $x^2 + x - 20$
i. $m^2 + 21m + 38$
j. $a^2 - 17a + 42$
k. $p^2 - 10p - 9$
l. $p^2 - 9p - 10$

Question #7: Factor of a Polynomial

Reference Q.14752

For which of the following trinomials is $a + 5$ not a factor?

- A. $a^2 + 6a + 5$
B. $a^2 + 11a + 30$
C. $a^2 + 10a + 50$
D. $a^2 + 10a + 25$

Question #8: Factoring Polynomials

Reference Q.14753

The expression $t^2 + kt + 12$ cannot be factored if k has the value

- A. -13
B. -8
C. 7
D. 11

Question #9: Evaluating a Variable

Reference Q.14754

The largest value of b for which $x^2 + bx + 32$ can be factored over the integers is _____.

Ⓢ **Question #10: Factoring Trinomials**

Reference Q.14745

- a. The expression $x^2 + bx + 12$ can be factored over the integers. Determine all possible values of b .
- b. If the expression $x^2 + 6x + c$, where $c > 0$, can be factored over the integers, determine all possible values of c .

Ⓢ **Question #11: A Volley Ball Court**

Reference Q.14746

A volleyball court has an area of $x^2 + 15x + 36$ square metres.

- a. Factor $x^2 + 15x + 36$ to find binomials that represent the length and width of the court.
- b. If $x = 3$, determine the length and width of the court.