

pre-calc 11 - TC

Chapter 1: factoring polynomials

Lesson 2: factoring trinomials when 'a' = 1

Question #1

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

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

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

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

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

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 #8

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

Reference Q.14754

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

Question #7

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 #10

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

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.