

Practice Run

1. Determine the greatest common factor of $22w^4u^3v$, $11w^4u^2v$, and $121w^3u^2v^2$.

2. Factor the following binomials:

a.
$$33x^2 - 3x$$

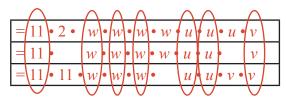
b.
$$18t^2 - 36t$$



Compare your answers.

1. Determine the greatest common factor of $22w^4u^3v$, $11w^4u^2v$, and $121w^3u^2v^2$.

$22w^4u^3v$	$11w^4u^2v$	$121w^3u^2v^2$
$= 11 \cdot 2 \cdot w \cdot w \cdot w \cdot w \cdot u \cdot u \cdot u \cdot v$	$= 11 \cdot w \cdot w \cdot w \cdot w \cdot u \cdot u \cdot v$	$= 11 \cdot 11 \cdot w \cdot w \cdot w \cdot u \cdot u \cdot v \cdot v$



$$GCF = 11w^3u^2v$$

2. Factor the following binomials:

a.
$$33x^2 - 3x = \frac{33x^2}{3x} - \frac{3x}{3x} = 11x - 1$$

= $3x(11x - 1)$

b.
$$18t^2 - 36t = \frac{18t^2}{18t} - \frac{36t}{18t} = t - 2$$

= $18t(t - 2)$

Factoring trinomials of the form $ax^2 + bx + c$ where a = 1

Factoring and expanding are reverse processes, so let's start by imagining multiplying two factors and then looking to see how you could work backwards from the product. Suppose a trinomial could be factored into (x + p) and (x + q).

Multiplying these factors gives

$$(x+p)(x+q) = x^2 + px + qx + pq$$

= $x^2 + (p+q)x + pq$

Notice that p + q is the *b*-value and pq is the *c*-value of the trinomial $ax^2 + bx + c$. This helpful result means that if there are two numbers, p and q, that add to give b and multiply to give c, then the trinomial $x^2 + bx + c$ can be factored as (x + p)(x + q).

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