Creating and Maintaining Open Resources for Developmental Algebra

Portland Community College

ORCCA - Open Resources for Community College Algebra

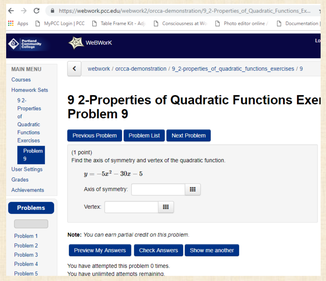
pcc.edu/ORCCA

Single Source Code

PreTeXt

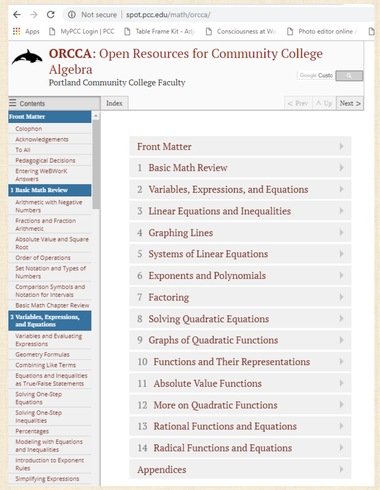
mathbook.pugetsound.edu

```
section-adding-and-subtracting-polynomials.ptx
    </introduction>

    <subsection>
        <title>Polynomial Vocabulary</title>

        <definition xml:id="definition-polynomial"><idx><h>polynomial</h></idx>
            <statement>
                <p>A <term>polynomial</term> is an expression that consists of terms summed together. Each term must be
                the product of a number and one or more variables raised to whole number powers. Since <m>0</m> is a
                whole number, a term can just be a number. A polynomial may have just one term. The expression <m>0</m>
                is also considered a polynomial, with zero terms.</p>
            </statement>
        </definition>
        <p>Some examples of polynomials in one variable are: <m>x^2-5x+2\qquad t^3-1\qquad 7y</m>. The expression <m>
        3x^4y^3+7xy^2-12xy</m> is an example of a polynomial in several variables.</p>

        <definition xml:id="definition-term-polynomial"><idx><h>polynomial</h><h>terms of</h></idx>
            <statement>
                <p>A <term>term</term><idx><h>terms</h></idx> of a polynomial is the product of a numerical coefficient
                and one or more variables raised to whole number powers. Since <m>0</m> is a whole number, a term can
                just be a number.</p>
            </statement>
        </definition>
        <p>For example:<ul>
            <li>
                <p>the polynomial <m>x^2-5x+3</m> has three terms: <m>x^2</m>, <m>-5x</m>, and <m>3</m>;</p>
            </li>
            <li>
                <p>the polynomial <m> 3x^4+7xy^2-12xy</m> also has three terms;</p>
            </li>
            <li>
                <p>the polynomial <m>t^3-1</m> has two terms.</p>
            </li>
        </ul></p>

        <definition xml:id="definition-coefficient"><idx><h>polynomial</h><h>coefficients of</h></idx><idx><h>coefficient</h>
        idx>
            <statement>
                <p>The <term>coefficient</term> (or numerical coefficient) of a term is the numerical factor in the
                term.</p>
            </statement>
        </definition>
        <p>For example:<ul>
            <li>
                <p>the coefficient of the term <m>\frac{4}{3}x^6</m> is <m>\frac{4}{3}</m>;</p>
            </li>
            <li>
                <p>the coefficient of the second term of the polynomial <m>x^2-5x+3</m> is <m>-5</m>;</p>
            </li>
            <li>
                <p>the coefficient of the term <m>\frac{y^7}{4}</m> is <m>\frac{1}{4}</m>.</p>
            </li>
        </ul></p>
```



webwork.maa.org

Free ADA accessible eBook



Embedded videos

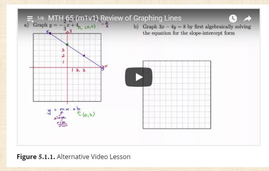
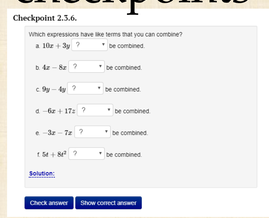
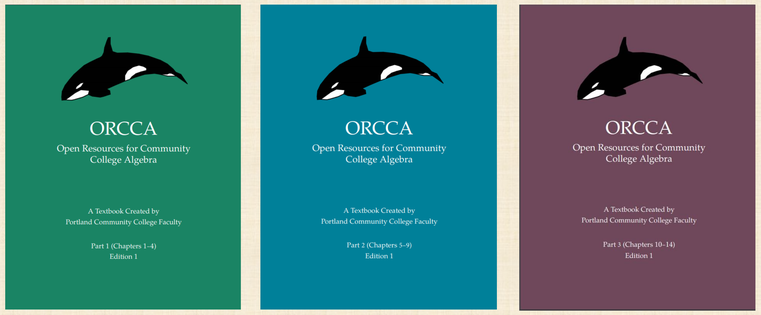


Figure 5.1.1. Alternative Video Lesson

Interactive checkpoints



Low-cost print books from Amazon CreateSpace



Ancillary Materials: Worksheets, Lecture Notes, Flipped Class Activities

Benefits

- Students have immediate free access for equity and inclusion
- ADA accessible
- Local control and customization of content
- Print and online versions from a single source - easier to maintain and sustain
- Same homework problems online and in the print book
- Allows flexibility for students and instructors
    - Print vs. eBook
    - Flipped classes
    - Hybrid classes
    - Online classes

American Institute of Mathematics

OpenOregon Educational Resources