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Objective: Rounding Whole Numbers

Verify Skill | Discussion

We can use the number line to see how whole numbers are rounded.

Suppose we want to round **46** to the nearest ten.

We observe that **46** is closer to **50** than to **40**.

We say that **46** rounds to **50**, and write $46 \approx 50$.

↑
approximately equal

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Objective: Prime Factorization

New Version | Express **378** as a product of prime factors using the Tree Method.

Solution | Procedure

- Start with *any* pair of factors whose product is **378** other than **1** and **378**. Such factors can be obtained by trial and error but it might be easiest to use the divisibility tests. Since **378** is even, start with **2**.
 $2 \times 189 = 378$
- Split the branch at **189**, and continue until the number at the end of each branch is a prime number. Then write the indicated product at the end of each branch.

$378 = 2 \times 3 \times 3 \times 3 \times 7 \times 3$
or $2 \times 3^3 \times 7$

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Objective: Proper and Improper Fractions

Important Terms | Verify Skill | Discussion

Area model description | Proper fractions | Improper fractions ✓

Click here $\frac{5}{5}$, or 1

The number of shaded parts (**5**) is equal to the total number of parts (**5**).

The shaded portion of the figure represents the fraction $\frac{5}{5}$ or **1**.

When the numerator and the denominator of a fraction are equal, it represents the complete unit or the number **1**.

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Sample Screens

Objective: Converting Fractions to Decimals

New Version Write $\frac{42}{11}$ as a repeating decimal, and then round to the nearest hundredth.

Solution Procedure

Rounded Decimal Repeating Decimal

Solution:

$$\begin{array}{r} 3.818 \\ 11 \overline{) 42.000} \\ \underline{-33} \\ 90 \\ \underline{-88} \\ 20 \\ \underline{-11} \\ 90 \\ \underline{-88} \\ 20 \end{array}$$

$\frac{42}{11} = 3.8181\dots$
 $= 3.\overline{81}$ repeating decimal.
 ~ 3.82 rounded to the nearest hundredth.

• Stop, the remainders 9 and 2 have started repeating.

Objective: Solving Proportions

New Version Solve the proportion:

Solution

$$\frac{x}{\frac{1}{5}} = \frac{2\frac{1}{3}}{\frac{5}{6}}$$

$x =$

Solution:

$$\frac{x}{\frac{1}{5}} = \frac{2\frac{1}{3}}{\frac{5}{6}}$$

$$\frac{5x}{6} = \frac{7}{15}$$

$$\frac{75x}{75} = \frac{42}{75}$$

$$x = \frac{42}{75}$$


$$x = \frac{14}{25}$$

On dividing both side by 75.

Objective: Understanding Percents

Important Terms Verify Skill Discussion

In Figure B, a unit is divided into 8 parts, and only 2 parts are shaded.



The fraction representing the shaded part is:

$$\frac{2}{8} = \frac{1}{4}$$

$$= \frac{1 \times 25}{4 \times 25}$$

$$= \frac{25}{100} = 25\%$$

Therefore, 25% of the region is shaded.

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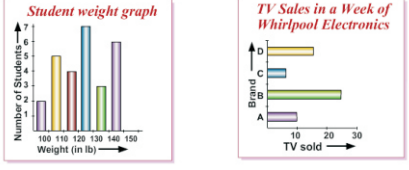
Sample Screens

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Objective: Reading Data from Bar and Line Graphs
Important Terms Verify Skill Discussion

A **bar graph** uses a number of **disjoint rectangles**, called **bars**, generally of equal width and different heights.

In a **vertical bar graph**, bars are arranged vertically.
In a **horizontal bar graph**, bars are arranged horizontally.



Student weight graph
Number of Students vs Weight (in lb)

TV Sales in a Week of Whirlpool Electronics
Brand vs TV sold

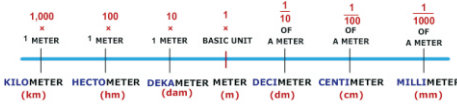
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Objective: Converting Units in the Metric System
Verify Skill Discussion

To convert measurements from one unit to another, identify the metric prefixes, and their relative positions with respect to one another.

The figure below shows the relation of the metric units for length.



KILOMETER (km) HECTOMETER (hm) DEKAMETER (dam) METER (m) DECIMETER (dm) CENTIMETER (cm) MILLIMETER (mm)

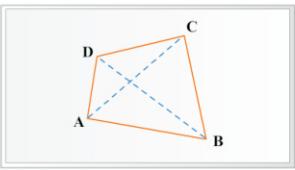
With the help of this figure, conversions of units become relatively easy and fast.

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Objective: Identifying Types of Quadrilaterals
Verify Skill Discussion

A **quadrilateral** is a polygon having four sides and is usually named by its **vertices** taken in clockwise or counterclockwise order.



The quadrilateral in the above figure is named as **ADCB** or **ABCD**.

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Objective: Finding Absolute Values

Use the number line in the figure below to find the absolute values of some numbers.

The absolute value of 9 = $|9| = 9$

The absolute value of -5 = $|-5| = 5$

Since the number of units between 0 and 0 is zero, the absolute value of 0 is $|0| = 0$.

Objective: Use the Distributive Property to solve the Equations

Solve the following equation for x.

$4(x - 6) + 3x = 11$ $x =$

Solution :

$$4(x - 6) + 3x = 11$$

$$4x - 24 + 3x = 11 \quad \text{Distributive Property.}$$

$$4x + 3x - 24 = 11 \quad \text{Associative Property.}$$

$$7x - 24 = 11 \quad \text{Combine like terms.}$$

$$7x - 24 + 24 = 11 + 24 \quad \text{Addition Property of Equality.}$$

$$7x = 35$$

$$\frac{1}{7} \cdot 7x = \frac{1}{7} \cdot 35 \quad \text{Multiplication Property of Equality.}$$

$$x = 5$$
