Unit 2 + 4 Review

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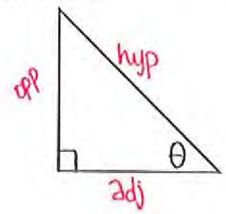
Unit 2 Review

The trigonometric ratios sine, cosine, and tangent are defined as ratios of the lengths of the sides in a right triangle with a given acute angle measure.

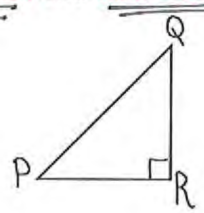


$$\sin\theta = \frac{opp}{hyp}$$

$$\cos\theta = \frac{adj}{hyp}$$

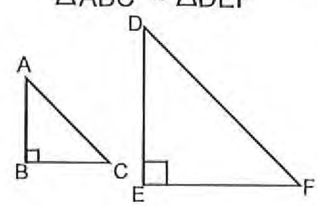
$$\tan\theta = \frac{opp}{adj}$$

The two acute angles of any right triangle are complementary (add to equal 90 degrees). As a result, if angles *P* and *Q* are complementary, sin*P* = cos*Q* and sin*Q* = cos*P*.



In similar triangles, because corresponding angles are congruent and corresponding sides are proportional, the trigonometric ratios of corresponding angles are equal.

$\Delta ABC \sim \Delta DEF$



sinA = sinD
cosA = cosD
tanA = tanD

sinC = sinF
cosC = cosF
tanC = tanF

To **solve a right triangle** means to find the lengths of all 3 sides and to find the measures of all 3 angles.

In right triangle application problems, DRAW A PICTURE and use the picture to find what you have been asked to find.

Finding missing side of a right triangle:

a) When given two sides, use Pythagorean Theorem.

b) When given 1 side and 1 acute angle, decide on the trig ratio and set up an equation using that trig ratio. Solve for the missing side.

Finding missing angle of a right triangle:

a) When given 1 acute angle, subtract the sum of the measures of those two angles from 180.

b) When given 2 sides, decide on the trig ratio and set up an equation using that trig ratio. Find the inverse trig trig ratio.

Unit 4 Review

Operations with Polynomials

To add polynomials, combine like terms.

To subtract polynomials, be sure to distribute the negative to each term in the second polynomial. Then combine like terms.

To multiply polynomials, multiply the each individual term in the first polynomial by all terms in the second polynomial. (Box Method)

Rational vs Irrational Numbers

Rational numbers can be written as repeating or terminating decimal...irrational numbers cannot.

Examples:

Rational Numbers: -5, 0.21, 1/2, 1/3

Irrational Numbers: $\sqrt{12}$ - 2, π

Operations with Rational and Irrational Numbers

Rational + Rational = Rational

Rational x Rational = Rational

Rational + Irrational = Irrational

Rational x Irrational = Irrational

Simplifying Square Root Radicals

Ex. $\sqrt{20}$

$\sqrt{4} \cdot \sqrt{5}$

$2 \cdot \sqrt{5}$

$2\sqrt{5}$

Ex. $\sqrt{48}$

$\sqrt{3} \cdot \sqrt{16}$

$\sqrt{3} \cdot 4$

$4\sqrt{3}$

Ex. $\sqrt{6x^2y^3z^{16}}$

$\sqrt{6} \cdot \sqrt{x^2} \cdot \sqrt{y^3} \cdot \sqrt{z^{16}}$

$\sqrt{6} \cdot x \cdot \sqrt{y^2} \cdot \sqrt{y} \cdot z^8$

$\sqrt{6} \cdot x \cdot y \cdot \sqrt{y} \cdot z^8$

$xyz^8\sqrt{6y}$

Ex. $\sqrt{18x^4y^7z^{15}}$

$\sqrt{18} \cdot \sqrt{x^4} \cdot \sqrt{y^7} \cdot \sqrt{z^{15}}$

$\sqrt{9} \cdot \sqrt{2} \cdot x^2 \cdot \sqrt{y^6} \cdot \sqrt{y} \cdot \sqrt{z^{14}} \cdot \sqrt{z}$

$3 \cdot \sqrt{2} \cdot x^2 \cdot y^3 \cdot \sqrt{y} \cdot z^7 \cdot \sqrt{z}$

$3x^2y^3z^7\sqrt{2yz}$