1.1 REAL NUMBERS & THE RECTAGULAR COORDINATE SYSTEM

Describe the following number sets:

Natural numbers:

Whole numbers:

Integers:

Rational numbers:
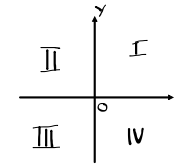
Irrational numbers:

Real numbers:

Rectangular Coordinate System

We sometimes call our coordinate system the Cartesian coordinate system.

Ex.1
What quadrant is (-3,4) in?

TRY
What quadrant is (2,-6) in?

Calculator Use

How can we write $\sqrt{x}$ as in exponential format?

What about $\sqrt[4]{x}$?   What about $\sqrt[4]{x^3}$?

Ex. 2
Approximate $\sqrt{45}$ on your calculator to the nearest thousandth.

TRY
Approximate $\sqrt[3]{92}$ on your calculator to the nearest thousandth.
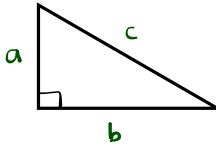
Ex. 3
Approximate $\dfrac{5.2 - 1.7}{3.4+6.1}$

Remember to use parenthesis round both the entire numerator AND denominator.
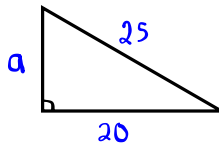
College Algebra

Pythagorean Theorem

In a RIGHT triangle the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.
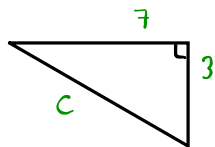

Ex.4

Use the Pythagorean theorem to find the length of the unknown side of the triangle.

TRY

Use the Pythagorean theorem to find the length of the unknown side of the triangle.
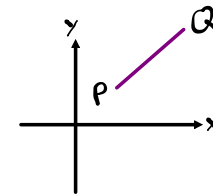

College Algebra

Distance Formula

Recall the distance formula for the distance between points $P(x_1, y_1)$ and $Q(x_2, y_2)$
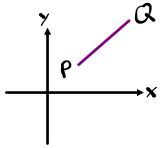

Ex.5

Find the distance between P(6,-3) and Q (-4,5)

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Midpoint Formula

Recall the midpoint formula for the midpoint between points $P(x_1,y_1)$ and $Q(x_2,y_2)$

Ex.6

Find the Midpoint between P(6,-3) and Q (-4,5)

Ex.7

Four quarters after the launch of the iPad, about 19.5 million were sold. After 10 quarters, about 99 million iPads were sold. Use the midpoint formula to estimate how many iPads were sold 7 quarters after the launch. How does your answer compare with the actual figure of 50 million. Discuss your answer.

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