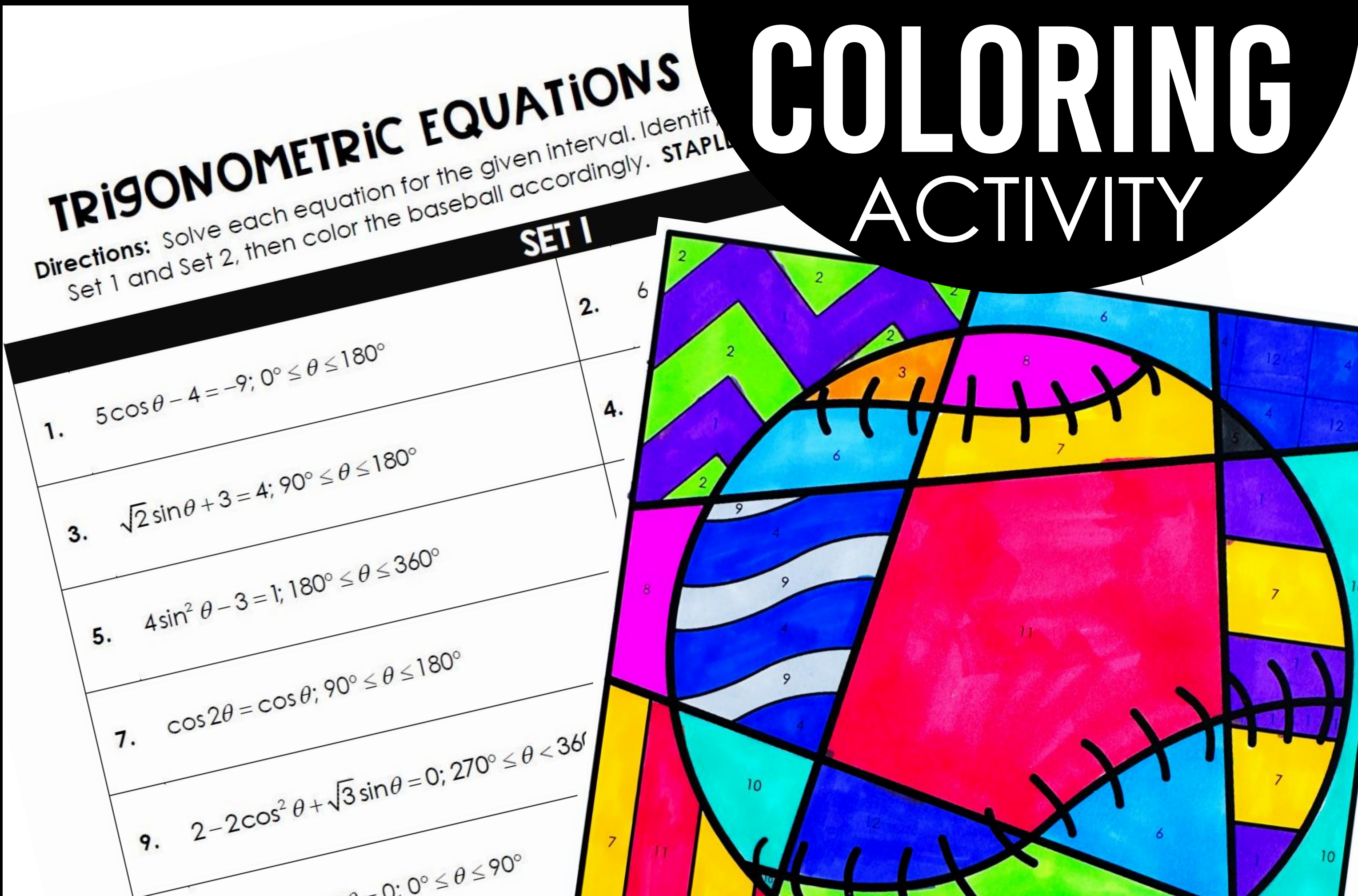
COLORING ACTIVITY



TRIGONOMETRIC

equations

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TRIGONOMETRIC EQUATIONS

Coloring Activity!

Objective: To practice solving trigonometric equations. This includes basic equations, equations that require factoring, and equations that require the use of fundamental trigonometric identities. Pythagorean Theorem, Reciprocal, and Double Angle Identities are included. A restricted interval is given for each equation. Problems range in difficulty.

Directions:

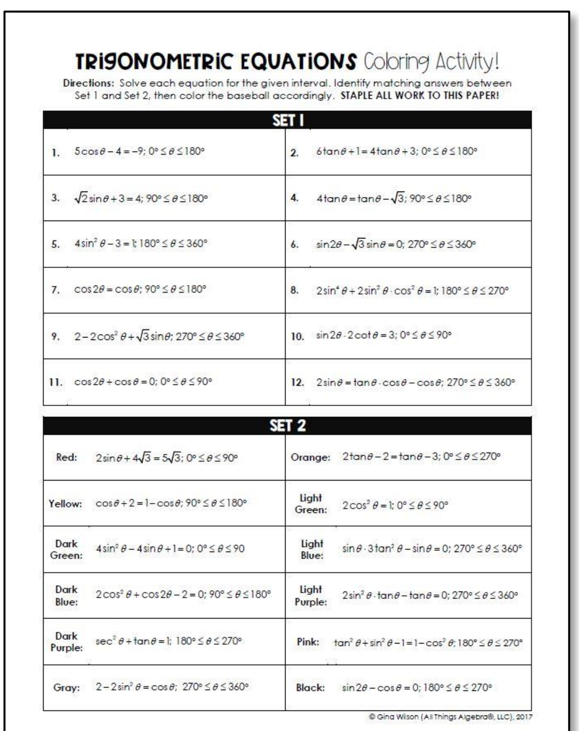
1) Copy the trigonometric equations and baseball coloring picture for each student. I typically copy the coloring sheet on the back to save paper. I have my students show all work on a separate sheet of notebook paper.

2) If working in partners, Partner A does Set 1 and Partner B does Set 2. Each partner solves the equations in their set. They check with each other for matching answers to determine how to color the baseball. **I highly recommend this is done as a partner activity!**

For example, if #1 is 180° and Dark Purple is also 180°, then all 1's on the picture are dark purple. If #2 is 45° and Light Green is also 45°, then all 2's on the picture are light green. And so on.

This can also be done as an independent activity where each student does both sets (24 total problems).

3) After solving all the problems, students can color the picture. I have them staple their work to the paper and turn in for a classwork grade.



TRIGONOMETRIC EQUATIONS Coloring Activity!

Directions: Solve each equation for the given interval. Identify matching answers between Set 1 and Set 2, then color the baseball accordingly. **STAPLE ALL WORK TO THIS PAPER!**

SET 1	
1. $5\cos\theta - 4 = -9;\ 0° \le \theta \le 180°$	2. $6\tan\theta + 1 = 4\tan\theta + 3;\ 0° \le \theta \le 180°$
3. $\sqrt{2}\sin\theta + 3 = 4;\ 90° \le \theta \le 180°$	4. $4\tan\theta = \tan\theta - \sqrt{3};\ 90° \le \theta \le 180°$
5. $4\sin^2\theta - 3 = 1;\ 180° \le \theta \le 360°$	6. $\sin 2\theta - \sqrt{3}\sin\theta = 0;\ 270° \le \theta \le 360°$
7. $\cos 2\theta = \cos\theta;\ 90° \le \theta \le 180°$	8. $2\sin^4\theta + 2\sin^2\theta \cdot \cos^2\theta = 1;\ 180° \le \theta \le 270°$
9. $2 - 2\cos^2\theta + \sqrt{3}\sin\theta;\ 270° \le \theta \le 360°$	10. $\sin 2\theta \cdot 2\cot\theta = 3;\ 0° \le \theta \le 90°$
11. $\cos 2\theta + \cos\theta = 0;\ 0° \le \theta \le 90°$	12. $2\sin\theta = \tan\theta \cdot \cos\theta - \cos\theta;\ 270° \le \theta \le 360°$

SET 2	
Red: $2\sin\theta + 4\sqrt{3} = 5\sqrt{3};\ 0° \le \theta \le 90°$	**Orange:** $2\tan\theta - 2 = \tan\theta - 3;\ 0° \le \theta \le 270°$
Yellow: $\cos\theta + 2 = 1 - \cos\theta;\ 90° \le \theta \le 180°$	**Light Green:** $2\cos^2\theta = 1;\ 0° \le \theta \le 90°$
Dark Green: $4\sin^2\theta - 4\sin\theta + 1 = 0;\ 0° \le \theta \le 90$	**Light Blue:** $\sin\theta \cdot 3\tan^2\theta - \sin\theta = 0;\ 270° \le \theta \le 360°$
Dark Blue: $2\cos^2\theta + \cos 2\theta - 2 = 0;\ 90° \le \theta \le 180°$	**Light Purple:** $2\sin^2\theta \cdot \tan\theta - \tan\theta = 0;\ 270° \le \theta \le 360°$
Dark Purple: $\sec^2\theta + \tan\theta = 1;\ 180° \le \theta \le 270°$	**Pink:** $\tan^2\theta + \sin^2\theta - 1 = 1 - \cos^2\theta;\ 180° \le \theta \le 270°$
Gray: $2 - 2\sin^2\theta = \cos\theta;\ 270° \le \theta \le 360°$	**Black:** $\sin 2\theta - \cos\theta = 0;\ 180° \le \theta \le 270°$