

## Pre Calculus 7 3 Part 1 Double Angles Identities

Lesson 187 | Precalculus | Double-angle identities

<https://www.youtube.com/watch?v=ml0-kyORkQQ>

Original practice aligned to the saved video title.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Show your reasoning.

**01**

An acute angle  $\theta$  has  $\tan \theta = 10/11$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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**02**

An acute angle  $\theta$  has  $\tan \theta = 9/5$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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**03**

An acute angle  $\theta$  has  $\tan \theta = 7/8$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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04

An acute angle  $\theta$  has  $\tan \theta = 12/13$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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05

An acute angle  $\theta$  has  $\tan \theta = 11/14$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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06

An acute angle  $\theta$  has  $\tan \theta = 3/12$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

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01

An acute angle  $\theta$  has  $\tan \theta = 10/11$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 220/221$ ;  $\cos(2\theta) = 21/221$ ;  $\tan(2\theta) = 220/21$ .

02

An acute angle  $\theta$  has  $\tan \theta = 9/5$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 45/53$ ;  $\cos(2\theta) = -28/53$ ;  $\tan(2\theta) = -45/28$ .

03

An acute angle  $\theta$  has  $\tan \theta = 7/8$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 112/113$ ;  $\cos(2\theta) = 15/113$ ;  $\tan(2\theta) = 112/15$ .

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04

An acute angle  $\theta$  has  $\tan \theta = 12/13$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 312/313$ ;  $\cos(2\theta) = 25/313$ ;  $\tan(2\theta) = 312/25$ .

05

An acute angle  $\theta$  has  $\tan \theta = 11/14$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 308/317$ ;  $\cos(2\theta) = 75/317$ ;  $\tan(2\theta) = 308/75$ .

06

An acute angle  $\theta$  has  $\tan \theta = 3/12$ . Find exact  $\sin(2\theta)$ ,  $\cos(2\theta)$ , and  $\tan(2\theta)$  when defined.

Use denominators  $1 + \tan^2 \theta$ :  $\sin(2\theta) = 8/17$ ;  $\cos(2\theta) = 15/17$ ;  $\tan(2\theta) = 8/15$ .