

NAME, SECTION

What change of variables is suggested by an integral containing  $\sqrt{x^2 - 100}$ ?

$$10 \sec \theta$$

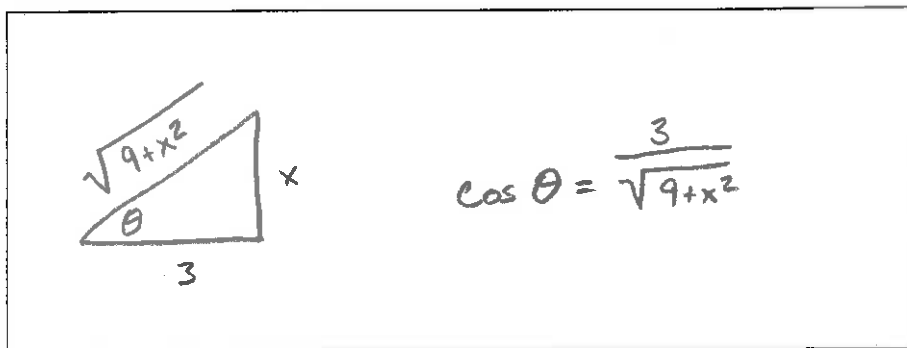
What change of variables is suggested by an integral containing  $\sqrt{2x^2 + 50}$ ?

$$5 \tan \theta$$

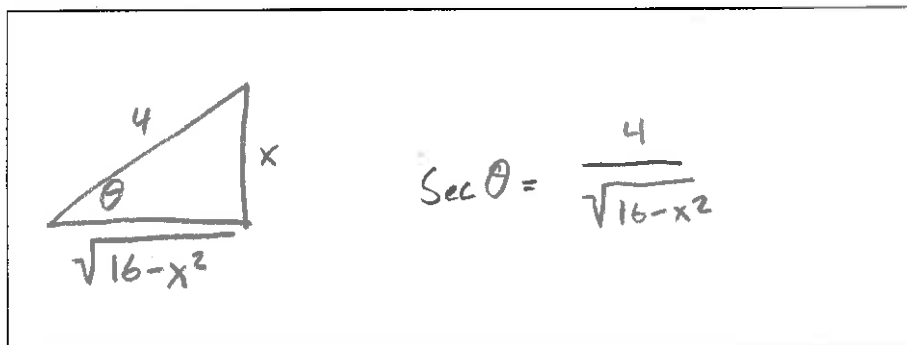
What change of variables is suggested by an integral containing  $\sqrt{64 - x^2}$ ?

$$8 \sin \theta$$

If  $x = 3 \tan \theta$ , express  $\cos \theta$  in terms of  $x$ , using a picture.



If  $x = 4 \sin \theta$ , express  $\sec \theta$  in terms of  $x$ , using a picture.



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What change of variables is suggested by an integral containing  $\sqrt{x^2 - 9}$ ?

$3 \sec \theta$

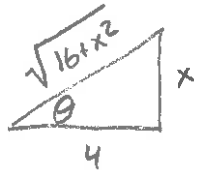
What change of variables is suggested by an integral containing  $\sqrt{2x^2 + 72}$ ?

$6 \tan \theta$

What change of variables is suggested by an integral containing  $\sqrt{100 - x^2}$ ?

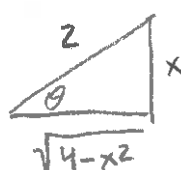
$10 \sin \theta$

If  $x = 4 \tan \theta$ , express  $\sin \theta$  in terms of  $x$ , using a picture.



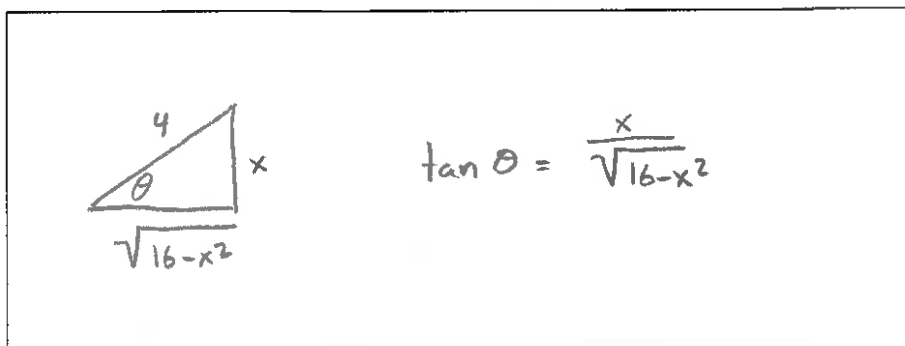
$$\sin \theta = \frac{x}{\sqrt{16+x^2}}$$

If  $x = 2 \sin \theta$ , express  $\cot \theta$  in terms of  $x$ , using a picture.



$$\cot \theta = \frac{\sqrt{4-x^2}}{x}$$

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What change of variables is suggested by an integral containing  $\sqrt{x^2 - 16}$ ?4 sec  $\theta$ What change of variables is suggested by an integral containing  $\sqrt{3x^2 + 12}$ ?2 tan  $\theta$ What change of variables is suggested by an integral containing  $\sqrt{81 - x^2}$ ?9 sin  $\theta$ If  $x = 4 \sin \theta$ , express  $\tan \theta$  in terms of  $x$ , using a picture.If  $x = 3 \cos \theta$ , express  $\cot \theta$  in terms of  $x$ , using a picture.