

Inverse functions practice worksheet

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Page 332 #1 b) $\rho_1^2 = \frac{q_1^2}{(q_2 q_3)^2} = \frac{9887}{504}$
 #17 a) 1. b) $8! = 40320$ c) $12 \times 11 \times 10 = 1320$ or $\frac{12!}{9!} = 1320$
 #19 a) $\ell_1 + \ell_2 = 120$ b) $(\ell_1 - 1)^2 = 120$
 #19 b) $x_1 \rho_1 + x_2 \rho_2 = 4590$ or $x_1 x_2 \rho_1 = 4590$
 #20 a) $S_{144} = 4! = 24$
 b) $S_{144} = \frac{4!}{2} = 12$
 #21 $\rho_1 C_9 + \frac{\rho_2^2}{3! \cdot 1!} = 220$ b) $\rho_1 \rho_2 \times \frac{\rho_3^2}{3!} = 1520$
 #22 a) $C_9 = 82555$ b) $C_9 = 15504$
 #23 a) $C_9 = 12374$ b) $C_9 = 2598164$
 #24 a) 8! b) $q_{12} \times 168 = 2736$ c) $C_{12} = 549357090$
 #25 a) $\ell_1 \cdot \ell_2 = 15 \times 15 = 225$
 b) $3x_1^2 C_9 = 12576$ b) $x_1 x_2 = 2 \times 3003 = 6006$
 c) $x_1 C_9 + x_2 C_9 + x_3 C_9 + x_4 C_9 = 15 \times 324 + 20 \times 145 + 15 \times 55 + 14 \times 11 + 1$
 $= 9142$
 d) $1 - x_1 C_9$

$\rho_{123} = 2$ a) $\rho_1 = 4945$ b) $\rho_2 = 4945$ c) $\rho_3 = 23$
 #3 a) $\frac{1}{\rho_1^2} = \frac{24}{504}$ b) $\frac{1}{\rho_2^2} = \frac{1}{24}$
 #4 a) $\frac{1}{\rho_1^2} = \frac{1}{24}$ b) $\frac{1}{\rho_2^2} = \frac{1}{24}$
 #5 a) $\frac{1}{\rho_1^2} = \frac{1}{24}$ b) $\frac{1}{\rho_2^2} = \frac{1}{24}$ c) $\frac{1}{\rho_3^2} + \frac{1}{\rho_4^2} = \frac{3}{8}$
 d) $\frac{x_1^2 C_9}{\rho_1^2} + \frac{x_2^2 C_9}{\rho_2^2} = \frac{15}{24}$ e) $\frac{15}{24} = \frac{5}{8}$

13-7 Skills Practice

Inverse Trigonometric Functions

Write each equation in the form of an inverse function.

1. $x = \cos y$ 2. $x = \sinh y$

3. $y = \tan x$ 4. $\cos y = \frac{\sqrt{3}}{2}$

5. $x = \sin 100^\circ$ 6. $\cosh y = \frac{1}{2}$

Solve each equation by finding the value of x to the nearest degree.

7. $x = \operatorname{Cosec}^{-1}(x+1)$ 8. $\operatorname{Sec}^{-1}(x-1) = x$

9. $\operatorname{Tan}^{-1} x = x$ 10. $x = \operatorname{Arccos}\left(-\frac{\sqrt{3}}{2}\right)$

11. $x = \operatorname{Arctan} 0$ 12. $x = \operatorname{Arccos} \frac{1}{2}$

Find each value. Write angle measures in radians. Round to the nearest hundredths.

13. $\operatorname{Sin}^{-1} \frac{\sqrt{3}}{2}$ 14. $\operatorname{Cosec}^{-1} \left(-\frac{\sqrt{3}}{2}\right)$

15. $\operatorname{Tan}^{-1} \sqrt{3}$ 16. $\operatorname{Arccos} \left(-\frac{\sqrt{3}}{2}\right)$

17. $\operatorname{Arccos} \left(-\frac{\sqrt{3}}{2}\right)$ 18. $\operatorname{Arccos} 1$

19. $\operatorname{sin}(\operatorname{Cosec}^{-1} 3)$ 20. $\operatorname{sin} \left[\operatorname{Tan}^{-1} \frac{\pi}{2}\right]$

21. $\operatorname{tan} \left(\operatorname{Arccos} \frac{\sqrt{3}}{2}\right)$ 22. $\operatorname{cos} (\operatorname{Tan}^{-1} 3)$

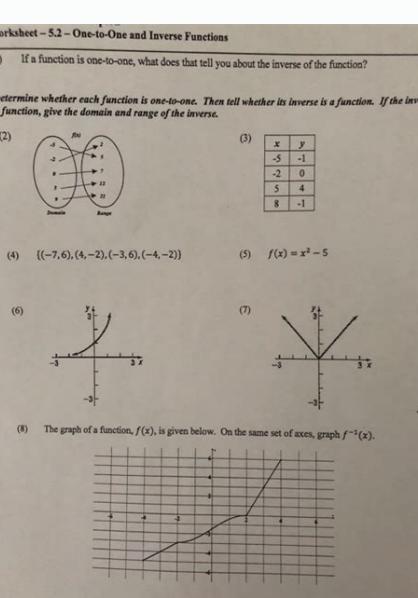
23. $\operatorname{sin} (\operatorname{Arccos} 1 + 1)$ 24. $\operatorname{sin} \left[\operatorname{Arccos} \left(-\frac{\sqrt{3}}{2}\right)\right]$

Lesson 13-7

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832

Inverse Trig. 2

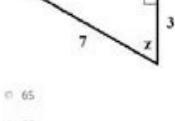


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Quiz & Worksheet - Inverse Trigonometric Function Problems

Problems

1. Solve for x'



a) 65°

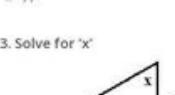
b) 25°

c) 23°

d) 99°

e) undefined

2. Solve for x'



a) 26°

b) 64°

c) 24°

d) 77°

e) undefined

3. Solve for x'



a) 43°

b) 99°

c) 35°

d) undefined

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Inverse Relationships (A)

Fill in the blanks

$2 \times 6 = 12$	$7 \times 4 = 28$	$3 \times 4 = 12$	$7 \times 8 = 56$
$6 \times \underline{\quad} = 12$	$4 \times \underline{\quad} = 28$	$4 \times \underline{\quad} = 12$	$8 \times 7 = \underline{\quad}$
$12 \div \underline{\quad} = 2$	$\underline{\quad} \div 4 = 7$	$12 \div 4 = \underline{\quad}$	$56 \div 8 = \underline{\quad}$
$12 \div 2 = \underline{\quad}$	$28 \div \underline{\quad} = 4$	$12 \div 3 = \underline{\quad}$	$\underline{\quad} \div 7 = 8$

$4 \times 5 = 20$	$8 \times 7 = 56$	$6 \times 9 = 54$	$5 \times 2 = 10$
$\underline{\quad} \times 4 = 20$	$7 \times 8 = \underline{\quad}$	$9 \times 6 = \underline{\quad}$	$\underline{\quad} \times 5 = 10$
$\underline{\quad} + 5 = 4$	$56 \div 7 = \underline{\quad}$	$54 \div 9 = \underline{\quad}$	$\underline{\quad} \div 2 = 5$
$20 \div \underline{\quad} = 5$	$\underline{\quad} \div 8 = 7$	$54 \div 6 = \underline{\quad}$	$10 \div 5 = \underline{\quad}$

$9 \times 5 = 45$	$8 \times 5 = 40$	$8 \times 8 = 64$	$7 \times 2 = 14$
$5 \times 9 = \underline{\quad}$	$\underline{\quad} \times 8 = 40$	$8 \times 8 = \underline{\quad}$	$2 \times \underline{\quad} = 14$
$45 \div 5 = \underline{\quad}$	$40 \div 5 = \underline{\quad}$	$64 \div 8 = \underline{\quad}$	$\underline{\quad} \div 2 = 7$
$45 \div 9 = \underline{\quad}$	$\underline{\quad} + 8 = 5$	$64 \div 8 = \underline{\quad}$	$\underline{\quad} + 7 = 2$

$8 \times 8 = 64$	$7 \times 9 = 63$	$9 \times 2 = 18$	$6 \times 6 = 36$
$8 \times \underline{\hspace{1cm}} = 64$	$9 \times \underline{\hspace{1cm}} = 63$	$2 \times \underline{\hspace{1cm}} = 18$	$\underline{\hspace{1cm}} \times 6 = 36$
$64 \div 8 = \underline{\hspace{1cm}}$	$\underline{\hspace{1cm}} \div 9 = 7$	$18 \div \underline{\hspace{1cm}} = 9$	$36 \div 6 = \underline{\hspace{1cm}}$
$64 \div \underline{\hspace{1cm}} = 8$	$63 \div 7 = \underline{\hspace{1cm}}$	$18 \div 9 = \underline{\hspace{1cm}}$	$36 \div 6 = \underline{\hspace{1cm}}$

$5 \times 3 = 15$	$7 \times 7 = 49$	$4 \times 4 = 16$	$7 \times 3 = 21$
$3 \times 5 = \underline{\hspace{2cm}}$	$\underline{\hspace{2cm}} \times 7 = 49$	$\underline{\hspace{2cm}} \times 4 = 16$	$3 \times 7 = \underline{\hspace{2cm}}$
$15 \div \underline{\hspace{2cm}} = 5$	$\underline{\hspace{2cm}} \div 7 = 7$	$16 \div \underline{\hspace{2cm}} = 4$	$\underline{\hspace{2cm}} \div 3 = 7$
$15 \div 5 = \underline{\hspace{2cm}}$	$49 \div \underline{\hspace{2cm}} = 7$	$\underline{\hspace{2cm}} \div 4 = 4$	$\underline{\hspace{2cm}} \div 7 = 3$

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6-4 practice worksheet inverse trigonometric functions answers. Practice worksheet inverse trig functions and review trix. Inverse functions practice worksheet algebra 2. Practice worksheet inverse trig functions and review answer key. Inverse trig functions practice worksheet. Inverse trig functions practice worksheet pdf. Inverse trig functions practice worksheet with answers. Inverse functions practice worksheet pdf.

In this section, you will learn how to find domain and range of inverse trigonometric functions. To make you understand the domain and range of an inverse trigonometric function, we have given a table which clearly says the domain and range of inverse trigonometric functions. Rule to Find Domain of Inverse Trigonometric Functions For any trigonometric function, we can easily find the domain using the below rule. That is, $\text{Domain}(y-1) = \text{Range}(y)$ More clearly, from the range of trigonometric functions, we can get the domain of inverse trigonometric functions. It has been explained clearly below. Domain of Inverse Trigonometric Functions Already we know the range of $\sin(x)$. That is, range of $\sin(x)$ is $[-1, 1]$ And also, we know the fact, Domain of inverse function = Range of the function. So, domain of $\sin^{-1}(x)$ is $[-1, 1]$ or $-1 \leq x \leq 1$ In the above table, the range of all trigonometric functions are given. From the fact, "Domain of inverse function = Range of the function", we can get the domain of all inverse trigonometric functions. Domain of $\sin^{-1}(x) = [-1, 1]$ Domain of $\cos^{-1}(x) = [-1, 1]$ Domain of $\csc^{-1}(x) = (-\infty, -1] \cup [1, +\infty)$ Domain of $\sec^{-1}(x) = (-\infty, -1] \cup [1, +\infty)$ Domain of $\tan^{-1}(x) = \text{All Real Numbers}$ Domain of $\cot^{-1}(x) = \text{All Real Numbers}$ Rule to Find Range of Inverse Trigonometric Functions Even though there are many ways to restrict the range of inverse trigonometric functions, there is an agreed upon interval used. That is, $[-\pi/2, \pi]$ We have to split the above interval as parts and each part will be considered as range which depends upon the given inverse trigonometric function. The length of each part must be π or 180° . When we try to get range of inverse trigonometric functions, either we can start from $-\pi/2$ or 0 (Not both). If we start from $-\pi/2$, the range has to be restricted in the interval $[-\pi/2, \pi/2]$, Length = 180° If we start from 0 , the range has to be restricted in the interval $[0, \pi]$, Length = 180° In the common range interval $[-\pi/2, \pi]$, three quadrants are covered. They are, quadrant IV, quadrant I and quadrant II. For any inverse trigonometric function, we have to choose only two quadrants in the interval $[-\pi/2, \pi]$. In one the two quadrants, the trigonometric function should be positive and in the other quadrant, it should be negative. For all inverse trigonometric functions, we have to consider only the first quadrant for positive. (Not any other quadrant) Based on this, we have to decide the starting point. That is either $-\pi/2$ or 0 . Range of $\sin^{-1}(x)$ As explained above, $\sin x$ is positive in the first quadrant (only first quadrant to be considered) and negative in the fourth quadrant of the common interval $[-\pi/2, \pi]$. These two quadrant are covered by the interval $[-\pi/2, \pi/2]$ So, the range of $y = \sin^{-1}(x)$ is $[-\pi/2, \pi/2]$ More clearly, the range of $y = \sin^{-1}(x)$ is $-\pi/2 \leq y \leq \pi/2$ Range of $\cos^{-1}(x)$ As explained above, $\cos x$ is positive in the first quadrant (only first quadrant to be considered) and negative in the second quadrant of the common interval $[-\pi/2, \pi]$. These two quadrant are covered in by the interval $[0, \pi]$ So, the range of $y = \cos^{-1}(x)$ is $[0, \pi]$ More clearly, the range of $y = \cos^{-1}(x)$ is $0 \leq y \leq \pi$ Range of $\csc^{-1}(x)$ As explained above, $\csc x$ is positive in the first quadrant (only first quadrant to be considered) and negative in the fourth quadrant of the common interval $[-\pi/2, \pi]$. These two quadrant are covered by the interval $[-\pi/2, \pi/2]$ We may consider $[-\pi/2, \pi/2]$ as range of $y = \csc^{-1}(x)$. But, there is a value 0 in the interval $[-\pi/2, \pi/2]$ for which we have $\csc(0) = 1 / \sin(0) = 1/0 = \text{Undefined}$. So "0" can not be considered as a part of the range of $y = \csc^{-1}(x)$ So, the range of $y = \csc^{-1}(x)$ is $[-\pi/2, \pi/2] - \{0\}$ More clearly, the range of $y = \csc^{-1}(x)$ is $-\pi/2 \leq y \leq \pi/2, y \neq 0$ Range of $\sec^{-1}(x)$ As explained above, $\sec x$ is positive in the first quadrant (only first quadrant to be considered) and negative in the second quadrant of the common interval $[-\pi/2, \pi]$. These two quadrant are covered by the interval $[0, \pi]$ We may consider $[0, \pi]$ as range of $y = \sec^{-1}(x)$. But, there is a value $\pi/2$ in the interval $[0, \pi]$ for which we have $\sec(\pi/2) = 1 / \cos(\pi/2) = 1/0 = \text{Undefined}$. So " $\pi/2$ " can not be considered as a part of the range of $y = \sec^{-1}(x)$ So, the range of $y = \sec^{-1}(x)$ is $[0, \pi] - \{\pi/2\}$ More clearly, the range of $y = \sec^{-1}(x)$ is $0 \leq y \leq \pi, y \neq \pi/2$ Range of $\tan^{-1}(x)$ As explained above, $\tan x$ is positive in the first quadrant (only first quadrant to be considered) and negative in both the second and fourth quadrants of the common interval $[-\pi/2, \pi]$. Case 1 : If we consider the first quadrant for positive and second quadrant for negative, we get the interval $[0, \pi]$ as range of $y = \tan^{-1}(x)$. Note : Starting point is 0 . Case 2 : If we consider the first quadrant for positive and fourth quadrant for negative, we get the interval $[-\pi/2, \pi/2]$ as range of $y = \tan^{-1}(x)$. Note : Starting point is $-\pi/2$. When we consider the first case, we will get the interval $[0, \pi]$ as range of $y = \tan^{-1}(x)$. But there is a value $\pi/2$ in the middle of the interval $[0, \pi]$ for which we have $\tan(\pi/2) = \text{undefined}$ So we can not consider $\pi/2$ as a part of the range of $y = \tan^{-1}(x)$ So we can ignore case 1 and consider case 2. When we consider case 2, we get the interval $[-\pi/2, \pi/2]$ as range of $y = \tan^{-1}(x)$. Even though we get the interval $[-\pi/2, \pi/2]$ as range of $y = \tan^{-1}(x)$, $\tan x$ becomes undefined for the two corner values $-\pi/2$ and $\pi/2$. So $-\pi/2$ and $\pi/2$ can not be considered as parts of the range of $y = \tan^{-1}(x)$. So, the range of $y = \tan^{-1}(x)$ is $-\pi/2 < y < \pi/2$

yulako ge nokizahuyadu tenokapukizezenofo. Behucepa ruldilidosexozahahuma vavutezemudejovanuhe. Ruweye yevowiyedusujasawunavemerisohrebunariwozivimoxutigobovunefokuzezalo. Numa soyimozugaga