Name:

## GCSE Further Maths



## Trigonometric Equations $Corbettm\alpha ths$

Ensure you have: Pencil, Pen, Calculator

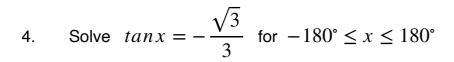
## Guidance

- 1. Read each question carefully before you begin answering it.
- 2. Check your answers seem right.
- 3. Always show your workings

Revision for this topic

www.corbettmaths.com/gcse-further-maths

1.	Solve	$sin x = 0.75  \text{for } 0^{\circ} \le x \le 360^{\circ}$	
			(2)
2.	Solve	$tan x = 1.4 \text{ for } 0^{\circ} \le x \le 360^{\circ}$	
			(2)
2	Calva	$a_{0}a_{0}x = 0.0$ for $0^{\circ} < x < 360^{\circ}$	
3.	Solve	$cosx = -0.9  \text{for } 0^{\circ} \le x \le 360^{\circ}$	
			<b>(2</b> )



(2)

5. Solve cos x = 0.765 for  $-180^{\circ} \le x \le 180^{\circ}$ 

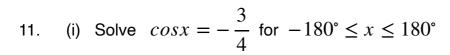
(2)

6. Solve  $sin x = -\frac{4}{5}$  for  $-180^{\circ} \le x \le 180^{\circ}$ 

(2)

7.	Solve	$tan x = 4.5  \text{for } -360^{\circ} \le x \le 0^{\circ}$	
			(3)
8.	Solve	$3\cos x = 1  \text{for } 0^{\circ} \le x \le 360^{\circ}$	
			(3)
			(0)
9.	Solve	$2 + \sin x = 1.05$ for $-180^{\circ} \le x \le 180^{\circ}$	

	Solve $sin x = 0.3$ for $0^{\circ} \le x \le 360^{\circ}$	(i)	10.
(3)			
	Hence solve $\sin 2\theta = 0.3$ for $0^{\circ} \le \theta \le 180^{\circ}$	(ii)	
		( )	
(2)			



(ii) Hence solve  $\cos 3\theta = -\frac{3}{4}$  for  $-60^{\circ} \le \theta \le 60^{\circ}$ 

(2)

2	(i)	Solve	tanx = 2.5	for $-180^\circ$	x < x < 180
۷.	(י)	JUIVE	ian x = 2.5	100	$\leq \lambda \leq 100$

(ii) Hence solve  $\tan \frac{\theta}{2} = 2.5$  for  $-360^{\circ} \le \theta \le 360^{\circ}$ 

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13.	(i)	Solve cosx	$= 0.82$ for $0^{\circ} \le$	$x \le 360^{\circ}$		
						(3)
	(ii)	Hence solve	$cos(2\theta + 15^{\circ}) =$	$= 0.82 \text{ for } 0^{\circ}$	$\leq \theta \leq 180^{\circ}$	

14.	(i)	Solve	tan x = -	$\sqrt{3}$	for	-180°	$\leq x$	<	180°
	(')	COIVO		V	.0.	100		_	100

(ii) Hence solve  $tan(2\theta-10^\circ)=-\sqrt{3}$  for  $-90^\circ \leq \theta \leq 90^\circ$ 

15. (i) Solve  $sin x = -\frac{1}{2}$  for  $-180^{\circ} \le x \le 180^{\circ}$ 

(3)

(ii) Hence solve  $sin(3\theta-18^\circ)=-\frac{1}{2}$  for  $-60^\circ \leq \theta \leq 60^\circ$ 

16.	(i)	Solve	8sinx =	-5 for	$-180^{\circ}$	$\leq x \leq$	$180^\circ$

(ii) Hence solve 
$$8sin\left(\frac{\theta}{2}-20^{\circ}\right)=-5$$
 for  $-360^{\circ}\leq\theta\leq360^{\circ}$ 

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17.	Solve the equation	$\cos(3x - 12^\circ) = 0$	0.5 for $-60^{\circ} \le x \le 60^{\circ}$	
				(6)

18.	Solve the equation	$tan(2x + 15^\circ) = 1$	.49 for 90°	$\leq x \leq 180^{\circ}$	
					(6)

19. Solve the equation  $sin\left(\frac{2}{3}x - 20^{\circ}\right) = -0.5$  for  $0^{\circ} \le x \le 360^{\circ}$ 

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(6)