

math in use

Calculus Final revision

Choose the correct answer

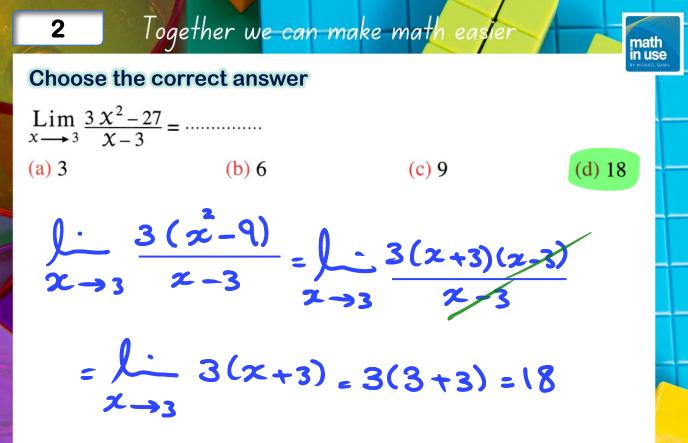
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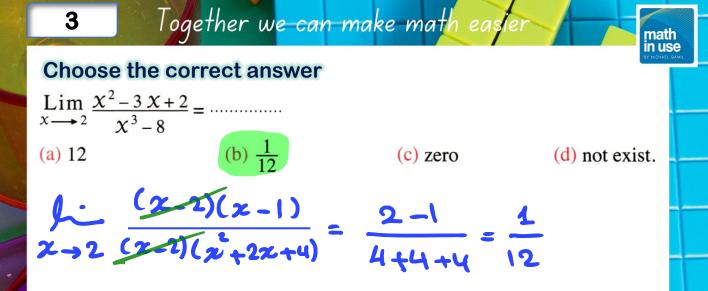
$\lim_{x \to 3} \frac{x^2}{x}$	$\frac{-8 x + 15}{x - 3}$	=	
(a) zero			(b) – 2

(c) does not exist. (d) 5

 $\frac{(x-3)(x-5)}{x-3} = \int \frac{1}{x-3}$ - (x-5) - 3-5

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4

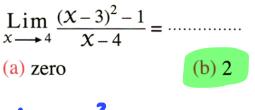
 $\lim_{x \to 0} \frac{(2x+1)^2 - 1}{x} = \dots$ (a) -4
(b) -3
(c) -3
(

(d) 4 (c) 2 Another sol. $2 \int \frac{(2\chi + 1)^{2} - (1)}{(2\chi + 1) - (1)}$ $(2\chi + 1) - (1)$ $2x^{2}(1) = 4$

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5

 $\frac{1}{2}\frac{x^2-6x+8}{2-4}$ (2-4)(2-2)

(c) 3 (d) 4 $\frac{And he(sol}{(x-3)^2 - (1)^2}$ $(x-3) \rightarrow 1 (x-3) - (1)$ 2(1)=2

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2-2 = 4 - 2 = 2

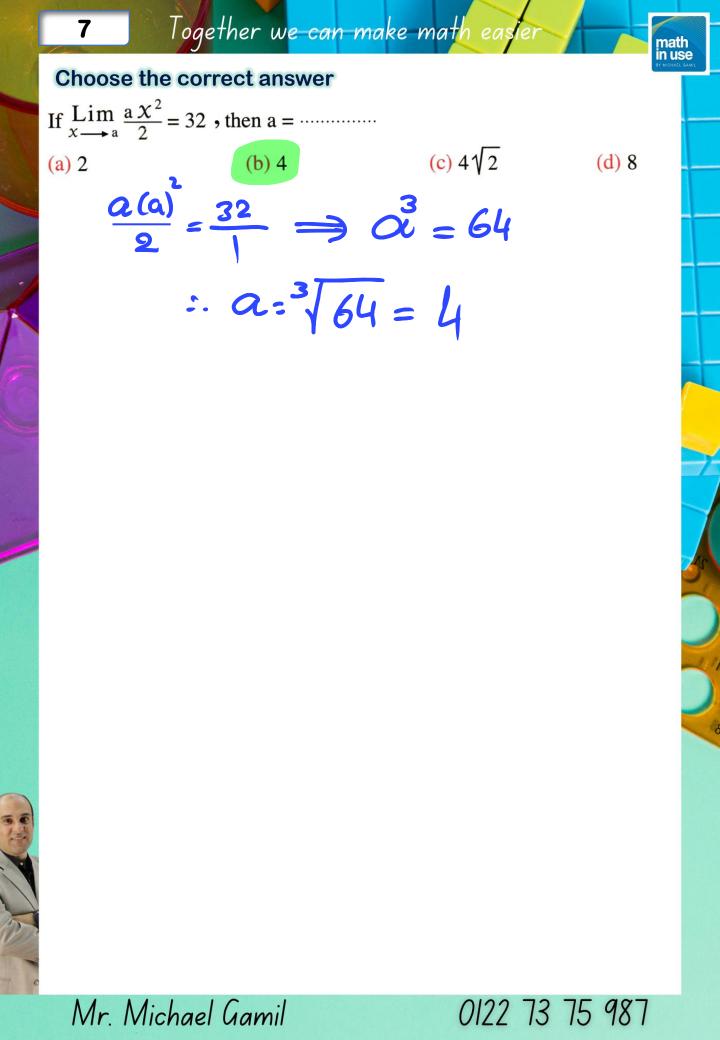
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Choose the correct answer $\lim_{x \to 1} \frac{2x+a}{x+1} = 5, \text{ then } a = \dots$ (a) 2 (b) 5 (c) 8 (d) 10 $\frac{2(1)+a}{(1)+1} = \frac{5}{1} \implies \frac{2+a}{2} = \frac{5}{1}$ $2+a = 10 \implies a = 8$

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$\lim_{x \to k} \frac{2 x^2 - x - 3}{4 x^2 - 9} = \frac{5}{12}$, then k	=
(a) $\frac{3}{2}$ (b) $\frac{-3}{2}$	
$\frac{2k^2 - k - 3k}{4k^2 - 9} = \frac{5}{12}$	Anot
24 K ² -12K-36 = 20K - 45	Li z-sk
$4\kappa^{2} - 12\kappa + 9 = 0$	
K = 3	•
	\

(c) $\frac{-2}{3}$ (d) $\frac{2}{3}$ ther Sol $\frac{(22-3)(2+1)}{(22-3)(22+1)} = \frac{5}{12}$ $\frac{K+1}{2K+3} = \frac{5}{12}$ 12K+12=10K+15 $\frac{2\kappa = 3}{1\kappa = \frac{3}{2}}$

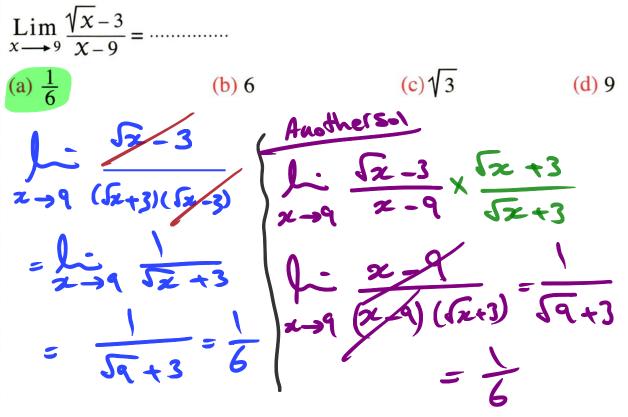
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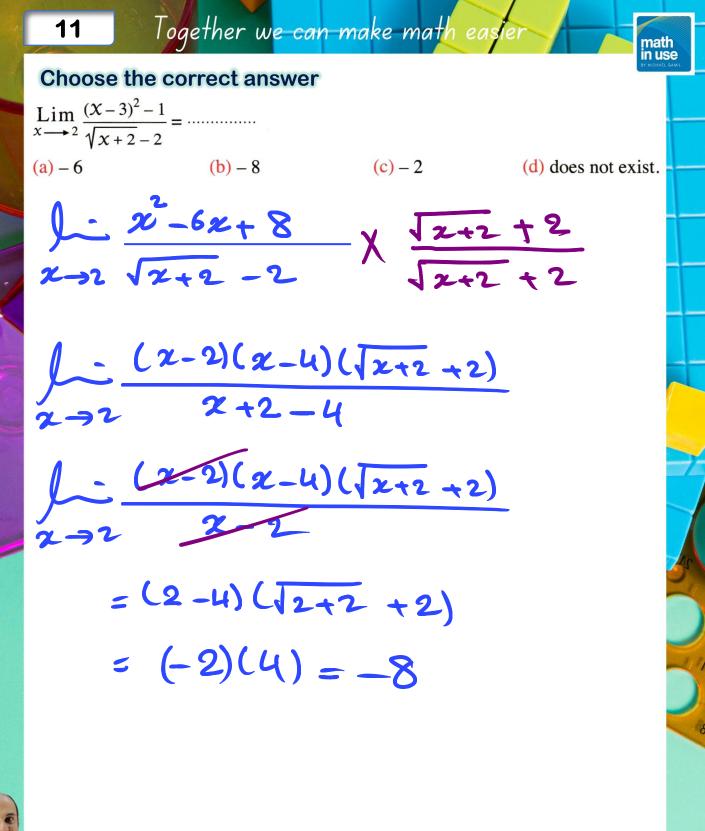
9	Together w e can	make math easier	math
	e the correct answer	-2x+? =-8	
If $\lim_{x \to 2}$	$\frac{x^2 - 8x + m}{x^2 - 4} = k$, then k	+ m = -1 + 12 = 11	
(a) 10	x = 4 (b) 11	(c) 12	(d) 13
4-	16+m=0	Another Sol	
-1	2+m=0	1. (x 2)(z-6)	= K
		x-32 (x-2)(x+2)	
0.	×2 8 ~ 12	m = -2x - 6 =	
x-12	x2-82+12=K	$\frac{2-6}{2+2} = K$,
تا	$\frac{(x-2)(x-6)}{(x-2)(x+2)} = 1$	K	_
X->1	(x=2)(x+2)		
2	$\frac{-6}{+2} = K$		
2	+2		
	K=-1)		

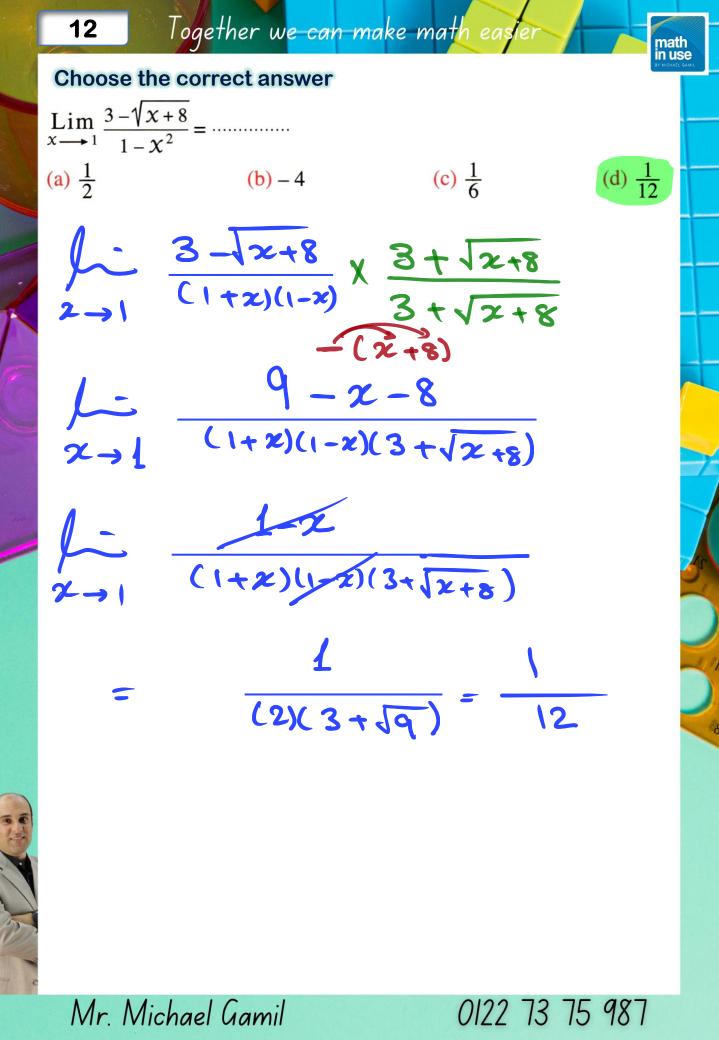
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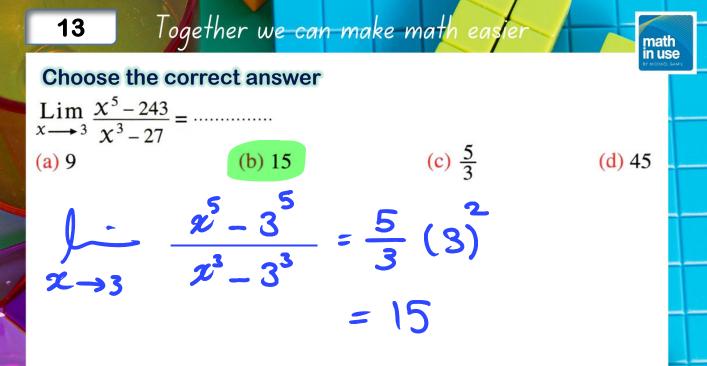
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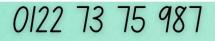


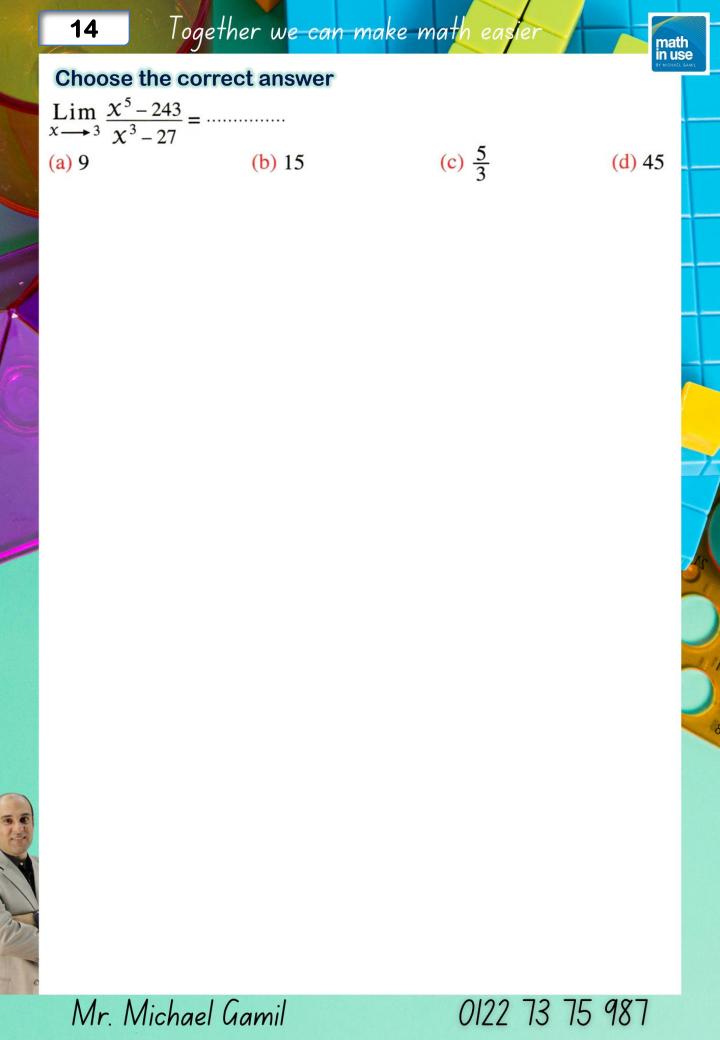
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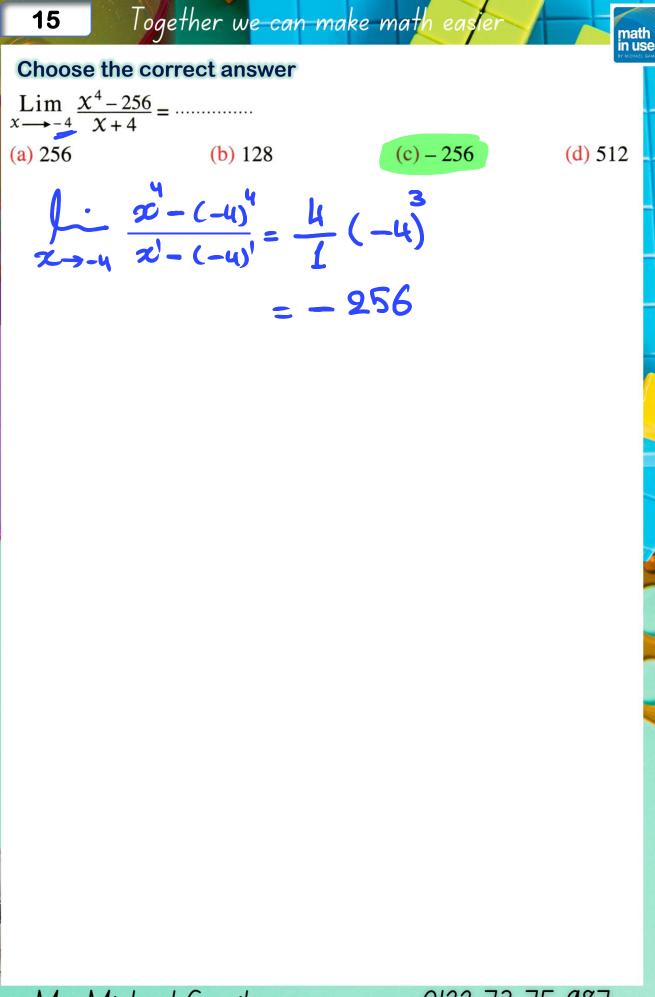


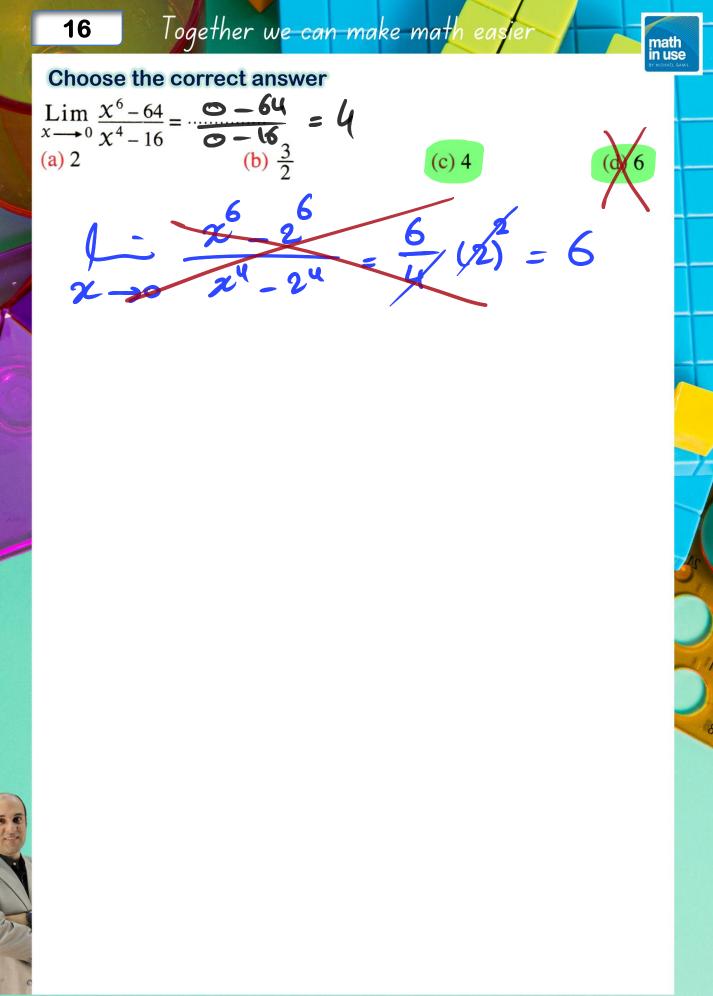


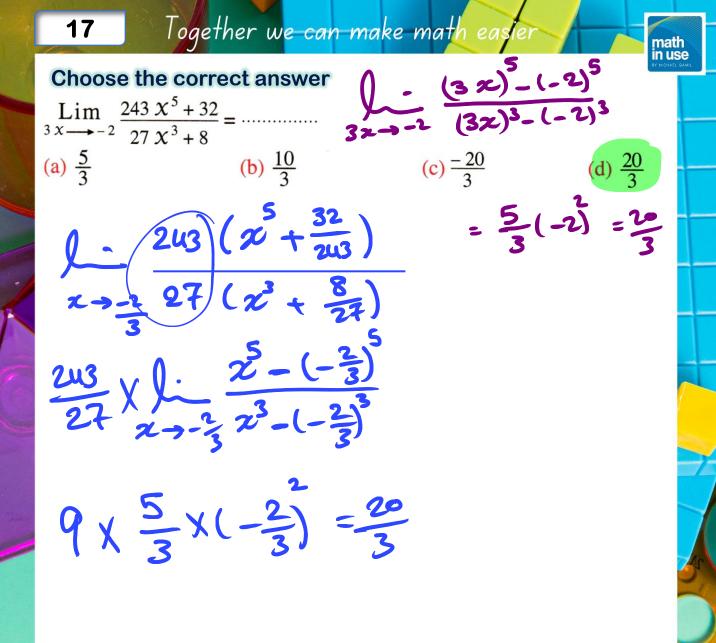




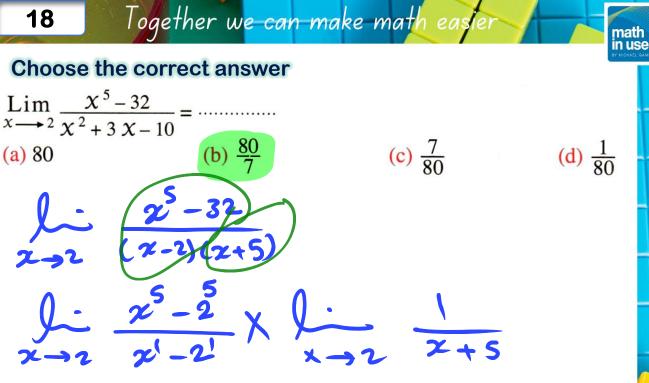




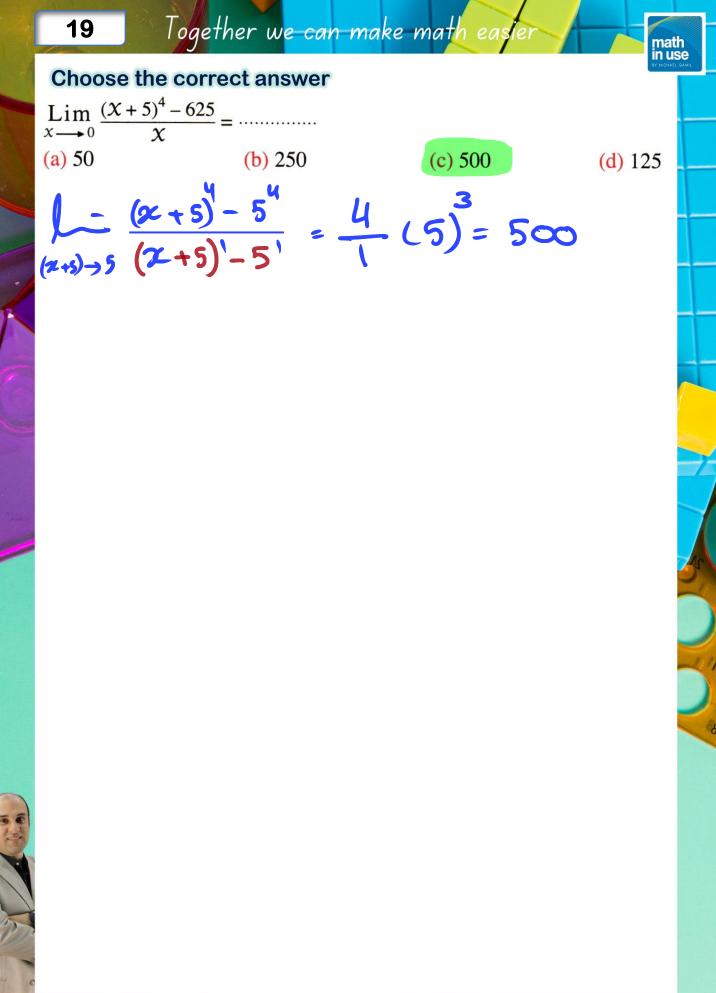


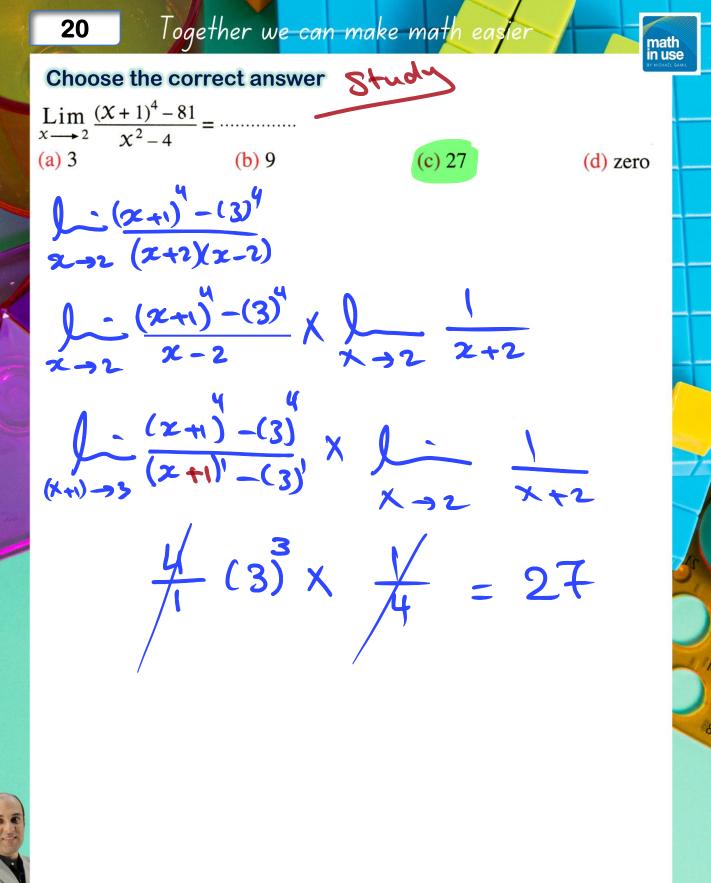


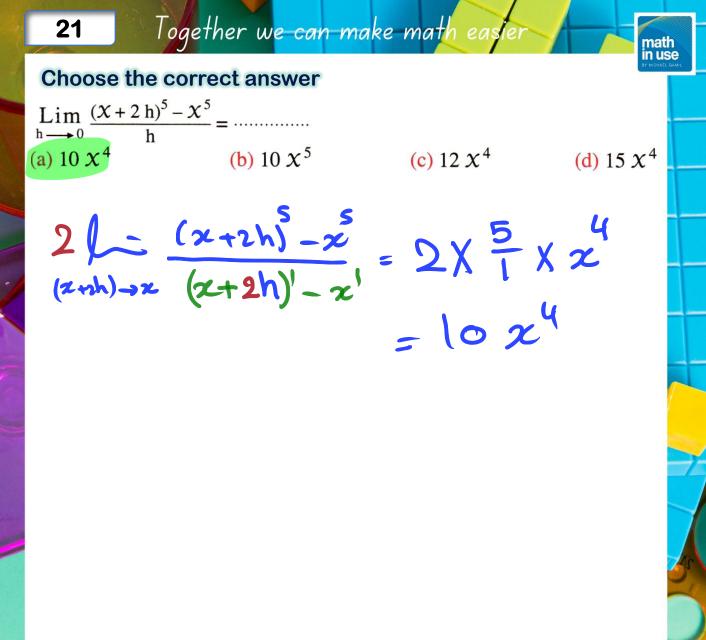
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 $\frac{5}{1}(2)^{4} \times \frac{1}{2+5} = \frac{80}{7}$

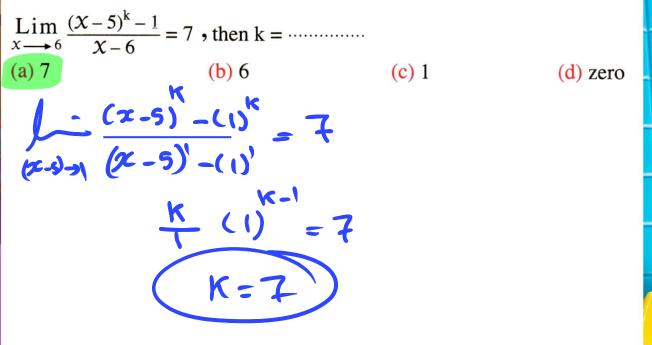






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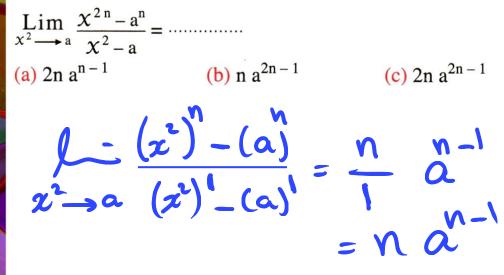
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(c) $2n a^{2n-1}$

(d) n a^{n-1}

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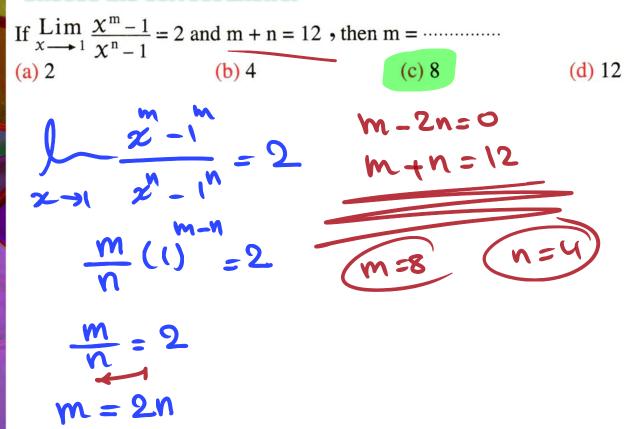
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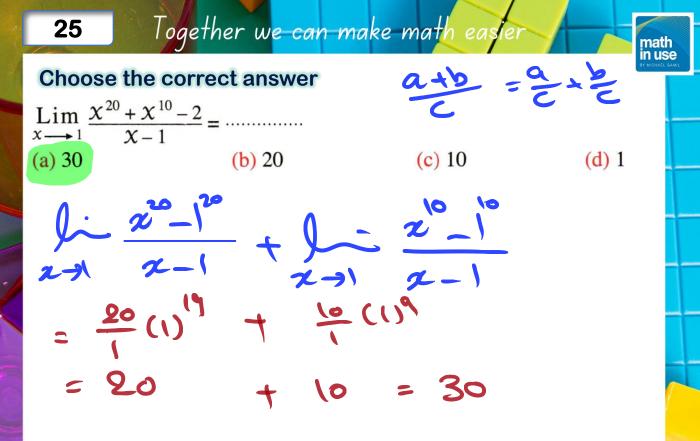
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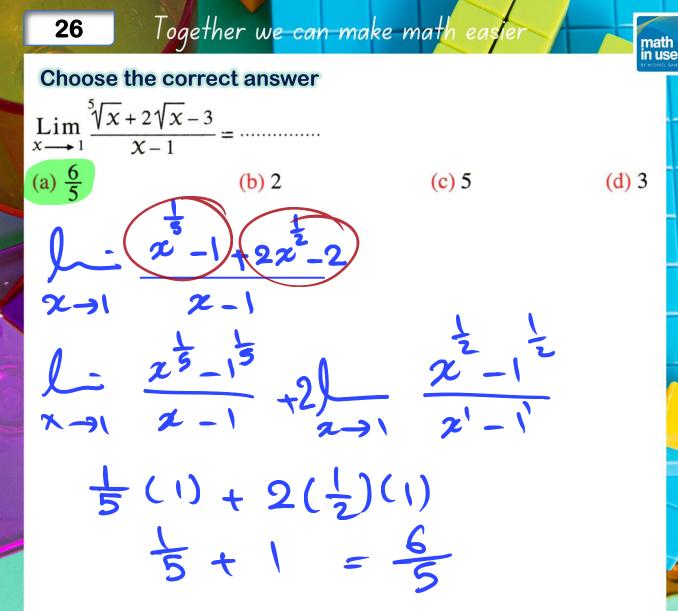
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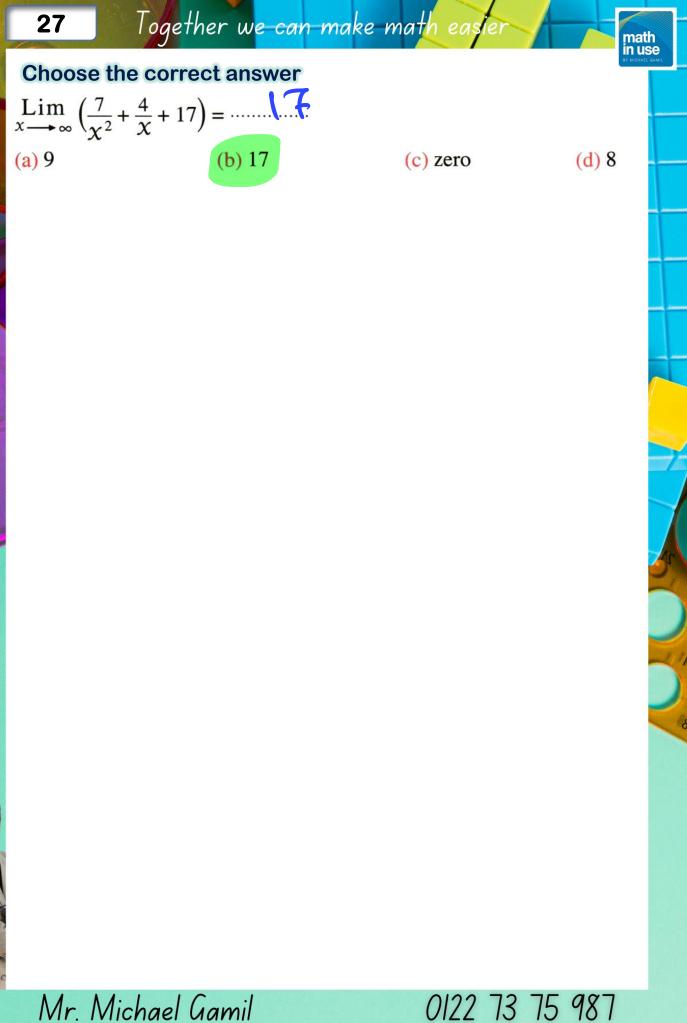
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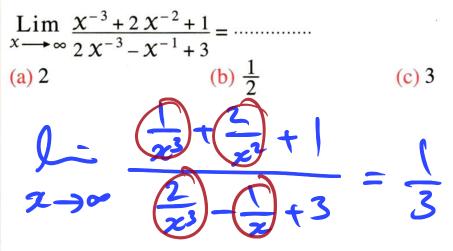
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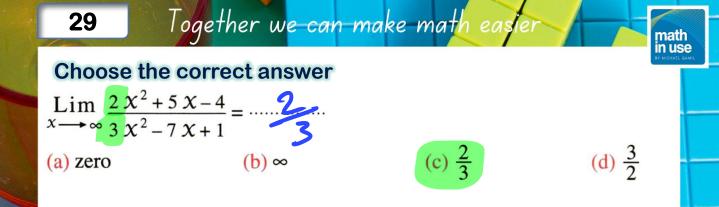
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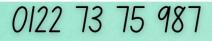
(d) $\frac{1}{3}$

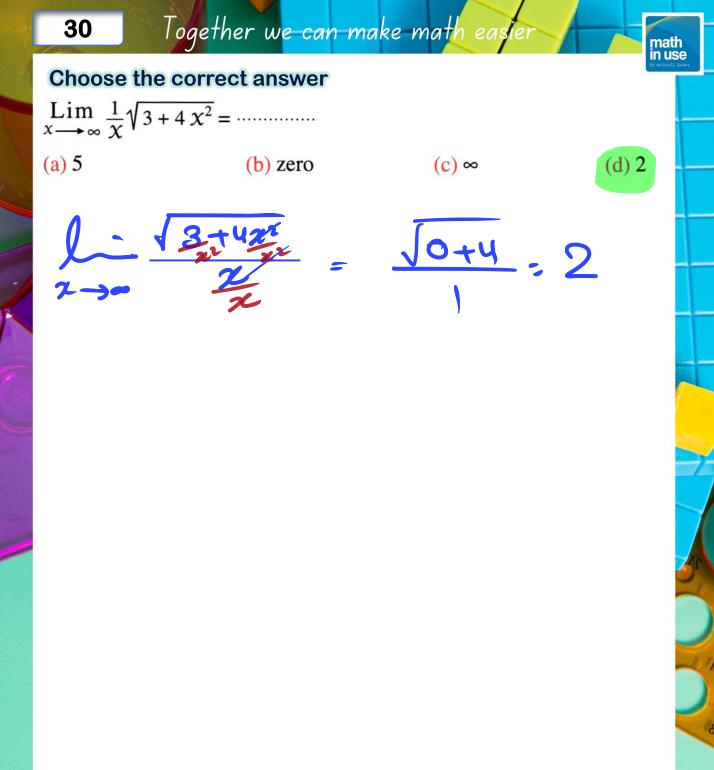
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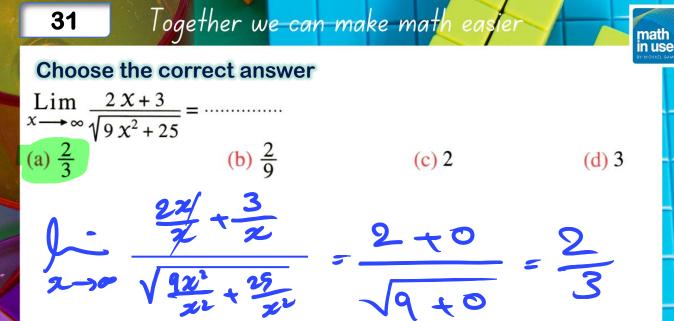
Choose the correct answer





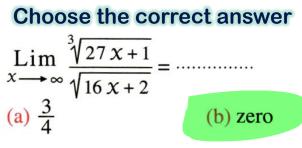


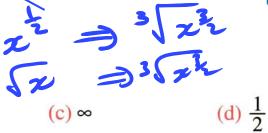


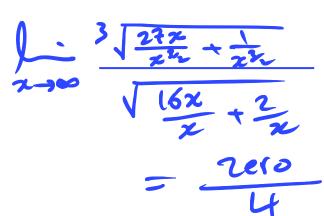


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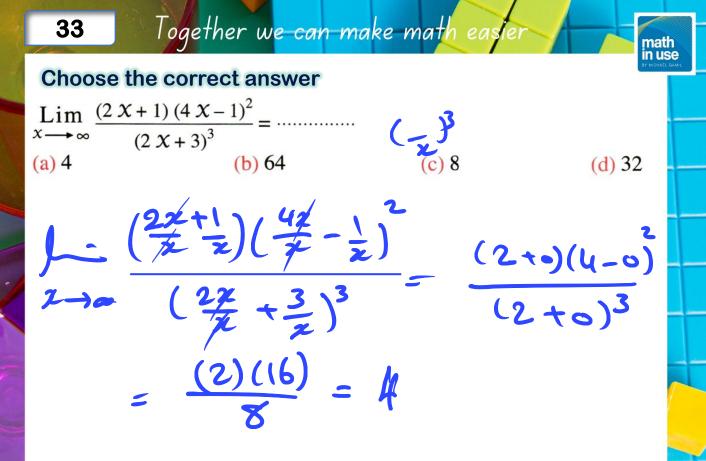




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Zero

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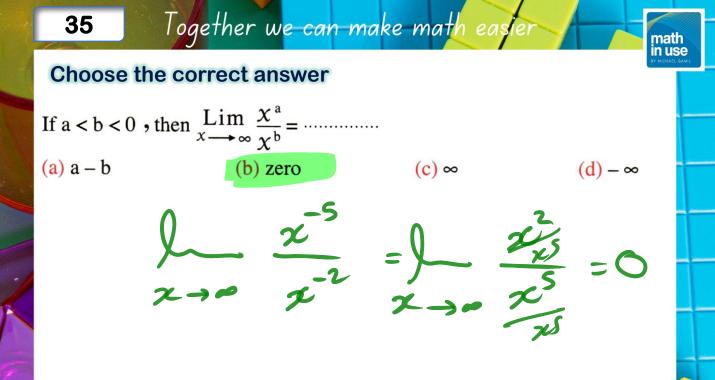


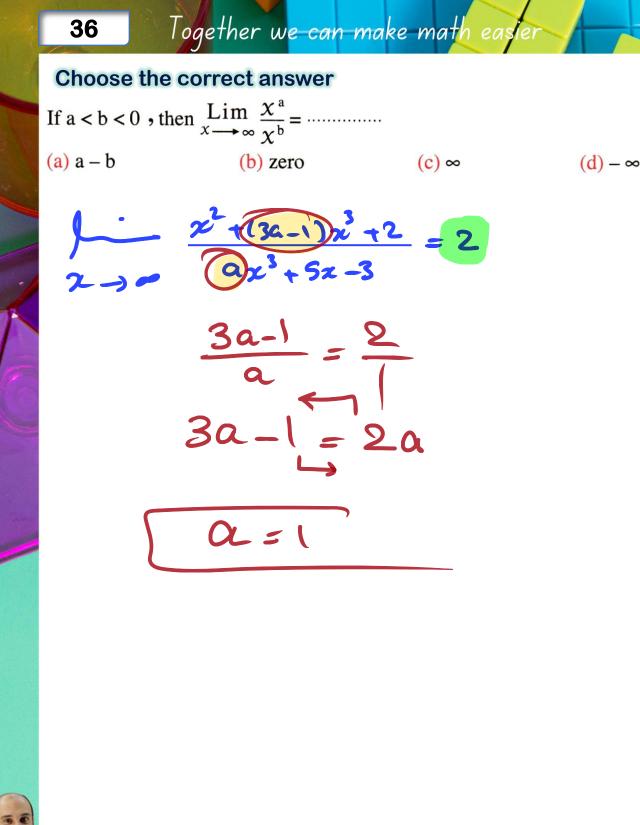
Choose the correct answer $\lim_{x \to \infty} \frac{(2x+5)^3}{6+5x-4x^3} = \cdots$ (a) 2 (b) -2 (c) $-\frac{1}{2}$ (d) $\frac{4}{3}$ (e) $-\frac{2x}{2} + \frac{5}{2}$ (c) $-\frac{1}{2}$ (c) -

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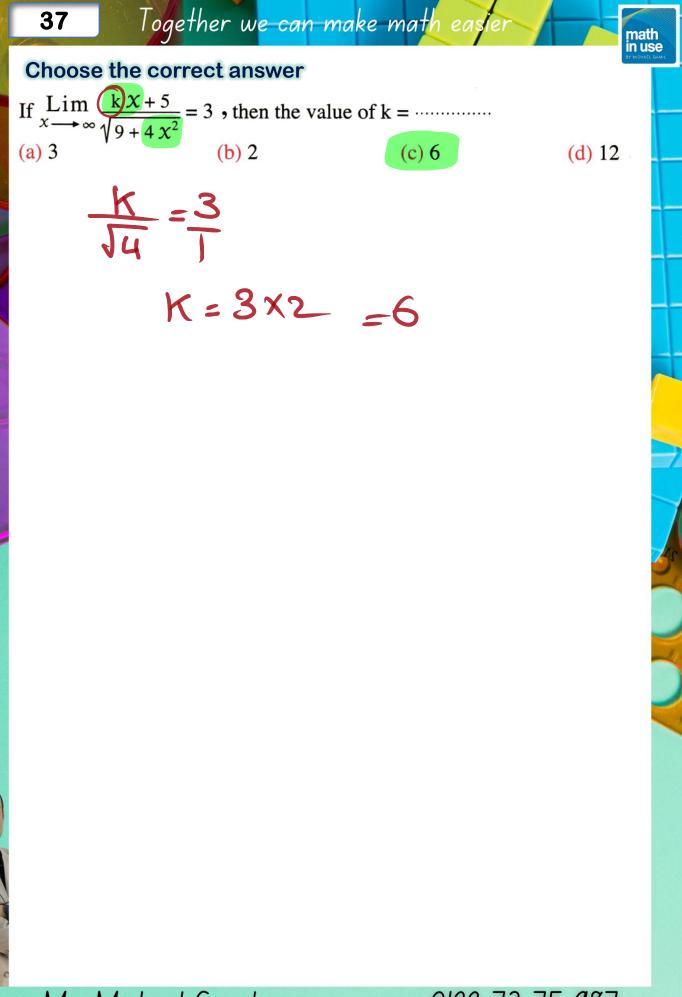
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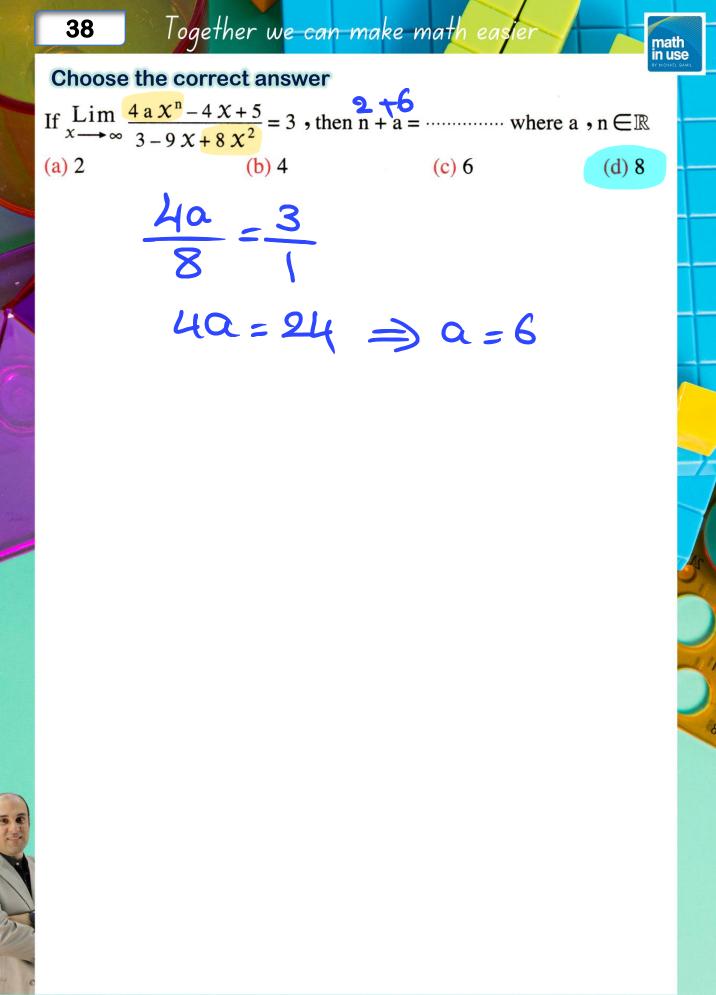




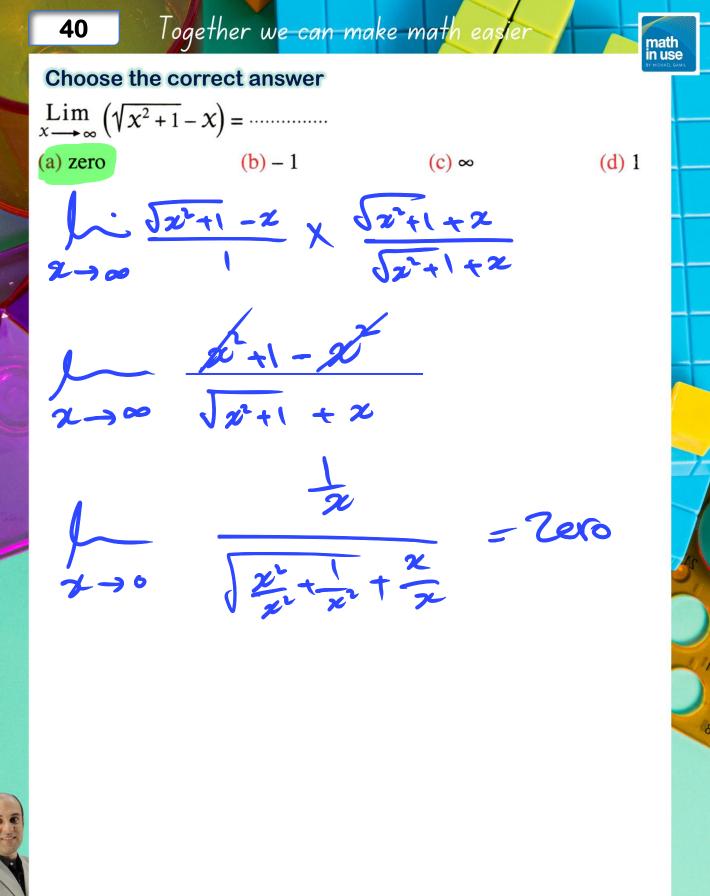
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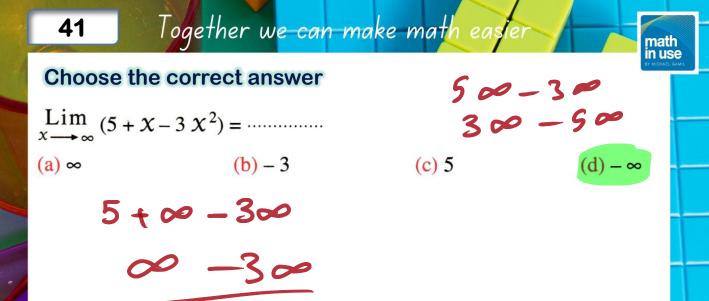
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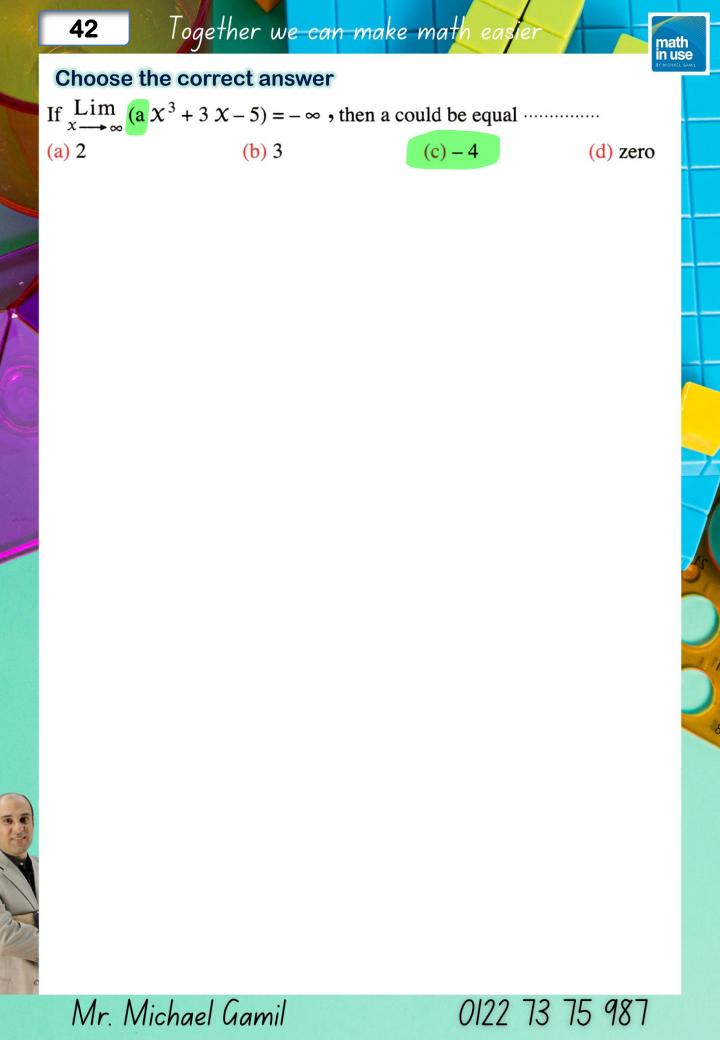


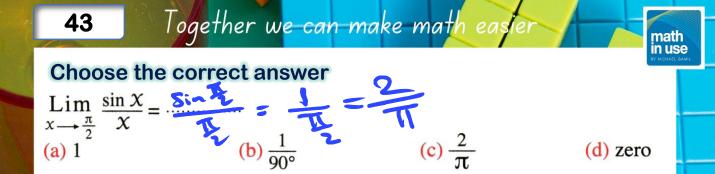


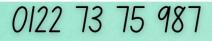


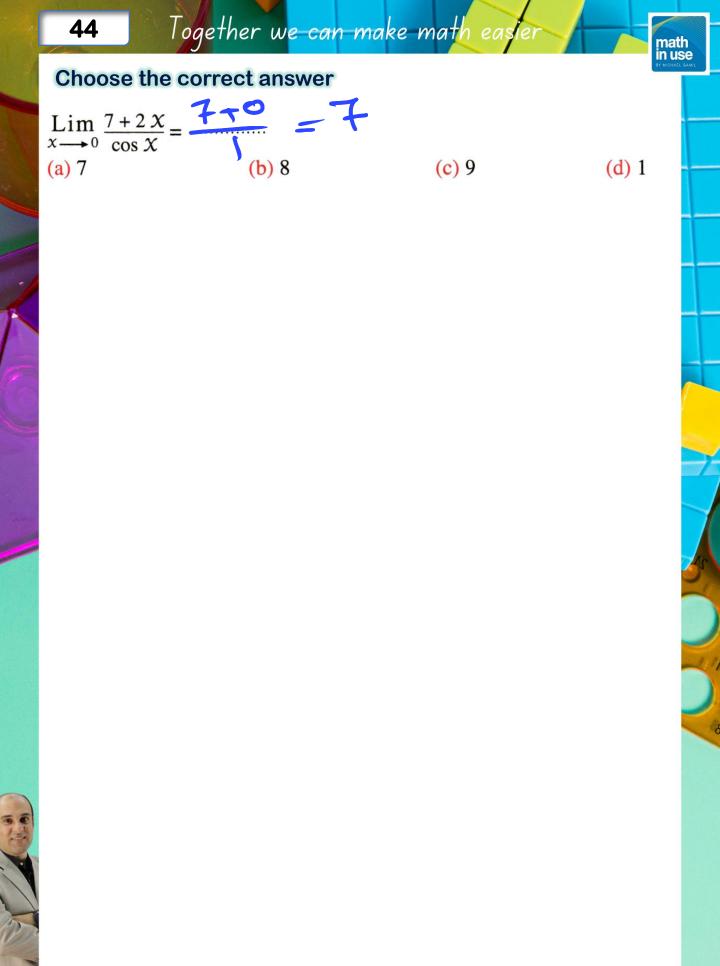


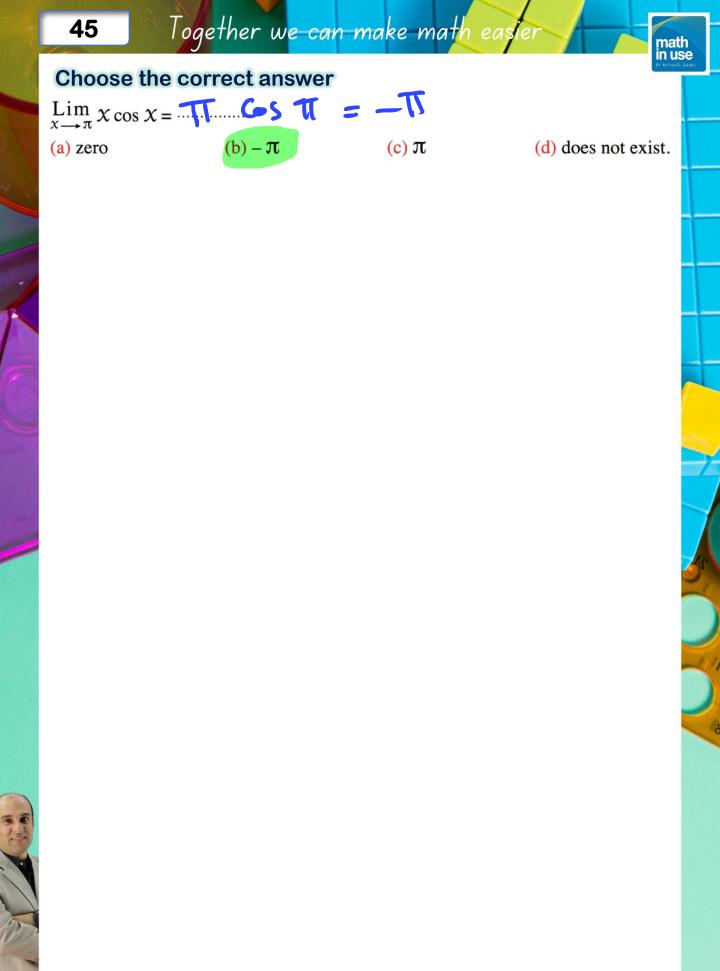








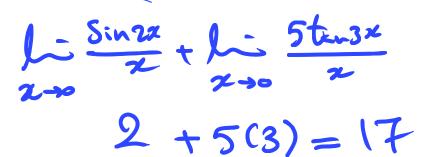




(c) 21

(d) 17

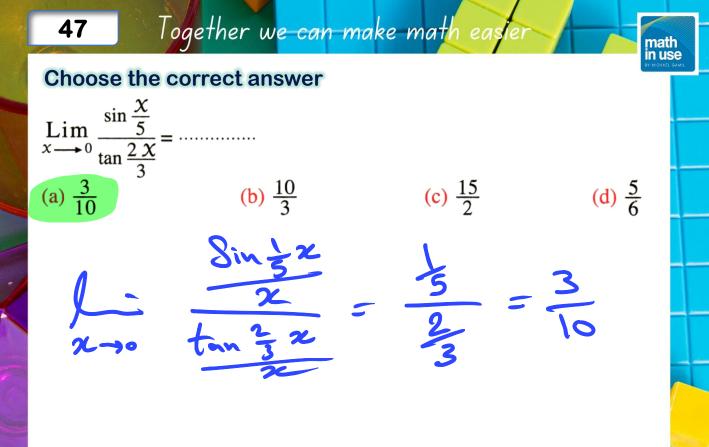
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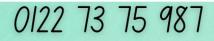


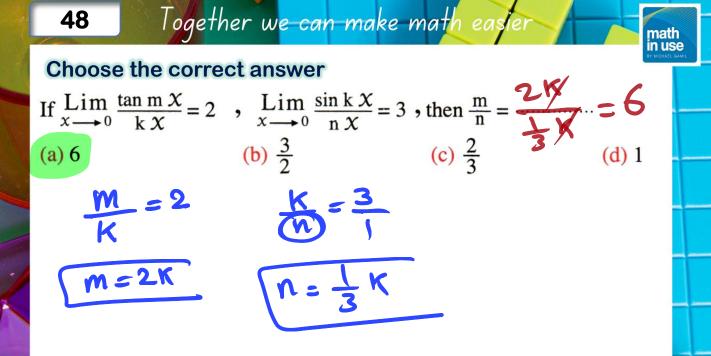
(b) 15

(a) 2

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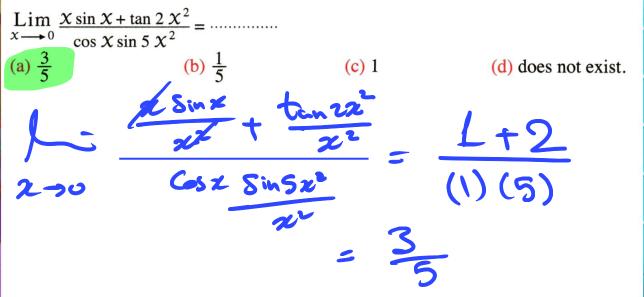
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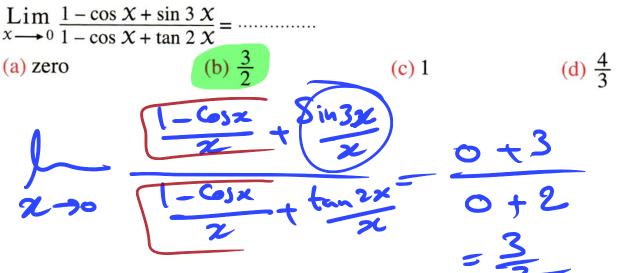
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Choose the correct answer

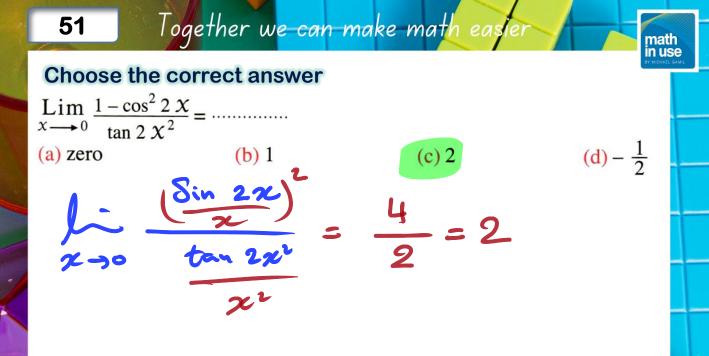
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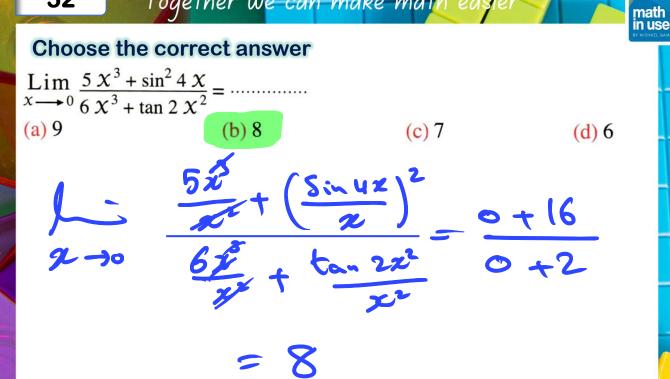
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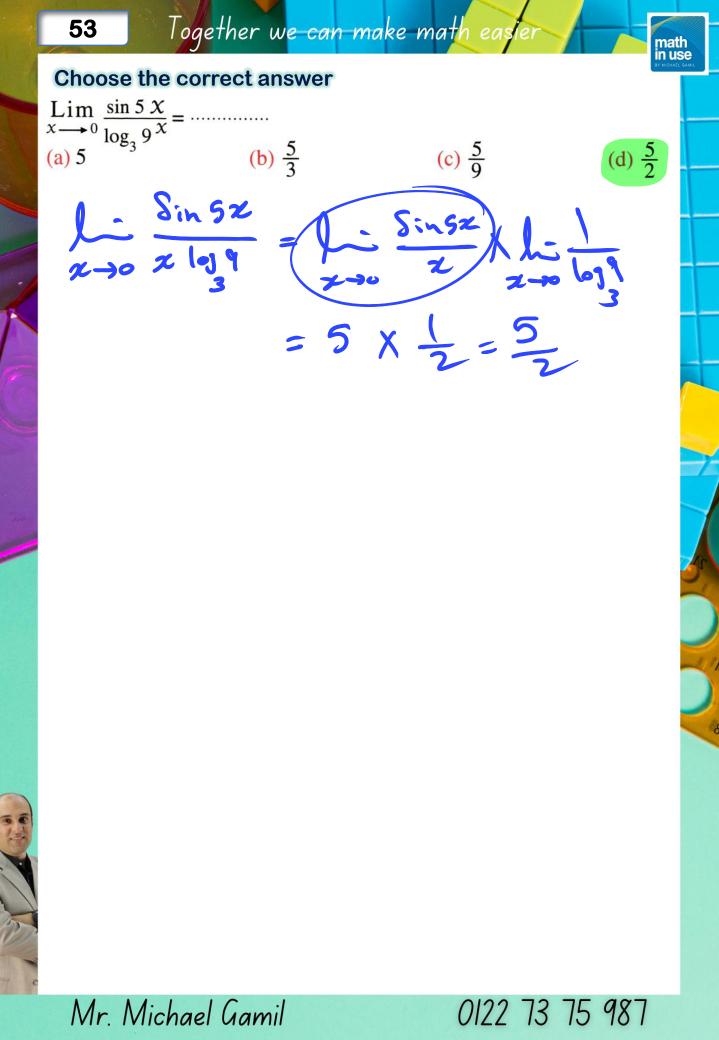
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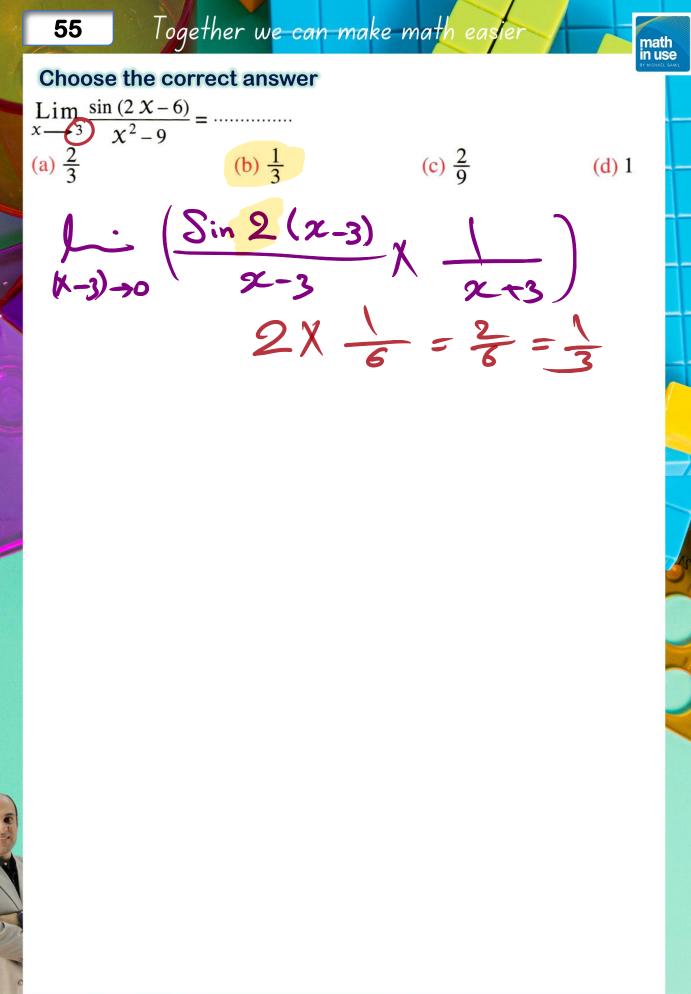
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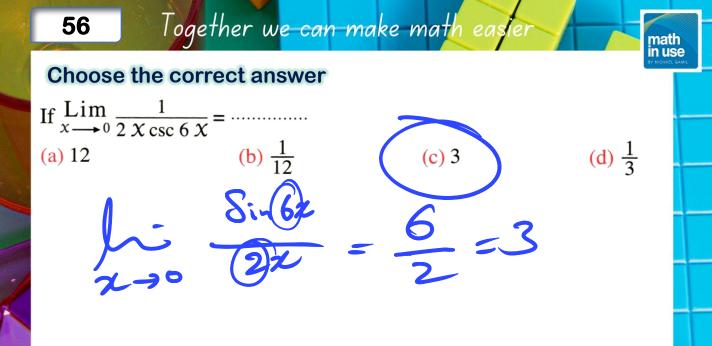


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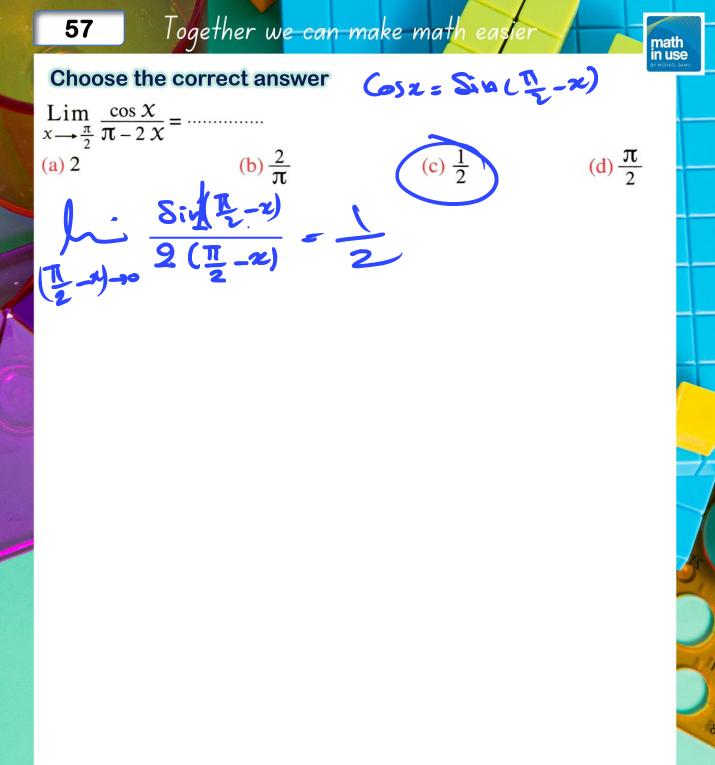


Together we can make math easie 54 math n use 1+tind = Sec20 1-Sec20 - - time Choose the correct answer $\lim_{x \to 0} \frac{1 - \sec x}{\cos x - 1} = \cdots$ (b) 1 (c) zero (a) 2(d) - 1 $\frac{1 - \sec x}{\cos x - 1} \times$ 1+Secz 1+ Sec × 1 - Sec x Cosz +X-X-Secz Cosz =1 X (

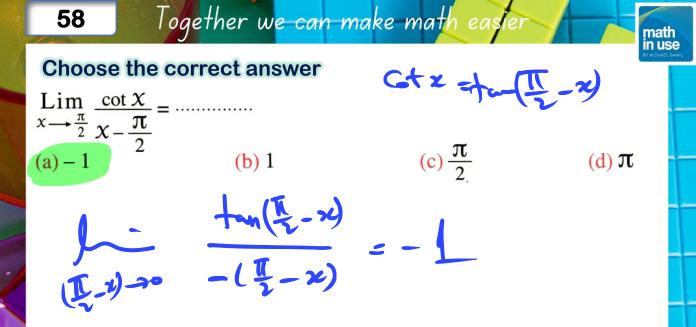


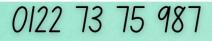












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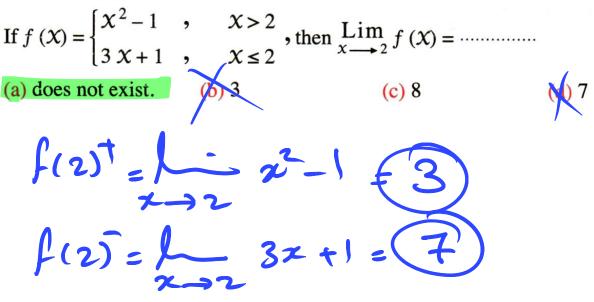
Choose the correct answer

If $\lim_{x \to 0} \frac{1 - \cos^2 b x}{3 x^2 + \tan x^2} = 16$, then $b = \dots$ (a) ± 8 (b) 8(c) 4(d) 2 16 6 $b^{2} = 64$ $b = \pm 8$

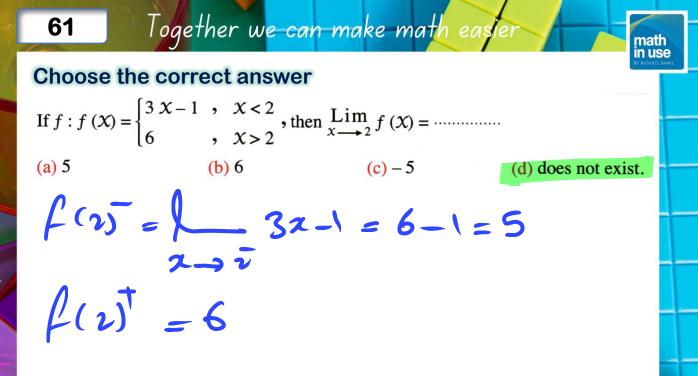
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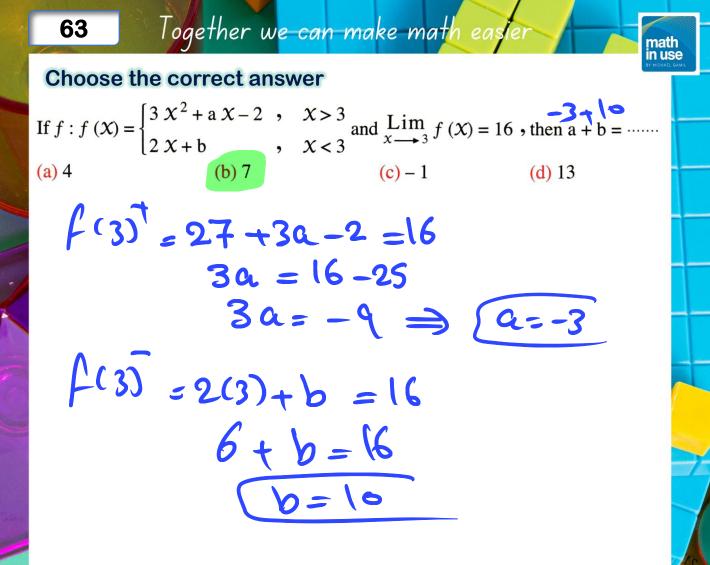
Choose the correct answer

If $f:f(X) = -$	$\left[\begin{array}{c} X+1 \\ 2 \\ \end{array} \right]$,	X > a	, and $\lim_{x \longrightarrow a} f(x)$ exists	, then a =
	[3X - 7]	,	X < a		
(a) 2		(b)	4	(c) – 4	(d) 8

 $a_{+1} = 3a_{-7}$ $1+7 = 3a_{-a}$ $2a = 8 \longrightarrow 6$

a=4)

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If $f: f(X) =$	$\begin{cases} \frac{\sin^2 2 x}{x^2} \\ 2 a + 3 \cos x \end{cases}$,	$x < 0$ and $\lim_{x \to 0} f(x)$	exists, then a =
	$2a + 3\cos x$,	X > 0	
(a) $\frac{1}{2}$	(b) zer		(c) 2	(d) $\frac{-1}{2}$

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If $f : f(X) =$	$\begin{cases} \frac{ x }{x} + 6 & , \end{cases}$	X < 0 has a limit at $X =$	0 , then a =
	la + cos 3 X,	X > 0	
(a) 4	(b) – 4	(c) 2	(d) - 2

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If $f(x) = \begin{cases} a x^2 + b \\ a x^2 + b \end{cases}$	$-9, x \neq 1$ is co	is continuous at $X = 1$, then $a = \cdots$			
[4 a	, x = 1				
(a) 1	(b) 3	(c) 9	(d) 36		

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If
$$f: f(x) = \begin{cases} \frac{x^4 - 81}{x^2 - 9} & x < 3 \\ x^2 + x + k & x \ge 3 \end{cases}$$
 is continuous at $x = 3$, then $k = \dots$
(a) 3 (b) 6 (c) 9 (d) 14

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(d) k > 9

Choose the correct answer

The function $f: f(X) = \frac{2}{X^2 - 6X + k}$ is continuous on \mathbb{R} , then

(a) $k \le 9$



 $\chi^2 - 6\chi + K$ a=1 b=-6 c= k

 $D=b^2-4ac<0$ $36 - 4 \times < 0$ -4K <-36 $\kappa > 9$

