p 9.15 qC1 Increase, when we was a superior of the function $y = f(x)$ is transformed to the graph of $y = f(x - h) + k$. a) Now that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k ? a) $f(x) = perent beag$ $g(x) = f(x - h) + k$ $g(x) = f(x - h) + k$ $f(x) = perent beag$ $g(x) = f(x - h) + k$ $f(x) = perent beag$ $g(x) = f(x - h) + k$ $f(x) = perent beag$ $f(x) = f(x - h) + k$ $f(x) = perent beag$ $f(x) = f(x - h) + k$ $f(x) = perent beag$ $f(x) = f(x - h) + k$ $f(x) = perent beag$ $f(x) = f(x - h) + k$ $f(x) = perent beag$ $f(x) = f(x - h) + k$ $f(x) = f(x - h)$										
C1 The graph of the function $y = f(x)$ is transformed to the graph of $y = f(x - h) + k$. a) Show that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k ? A) $f(x)$ - patient bease $g(x) = f(x - h) + k$. South to the Right boy h units the mapping: $(x, y) \Rightarrow (x + h), (y + k)$ you can calculate the read first h the new y that we effect an the new y that we reflect the new y that we reflect h the new y that is effect and invested the result of the reflect h on the x calculation. The notice will not trusted that h and h is a chapter h and	р 0	15 qC	1							
is transformed to the graph of $y = f(x - h) + k$ a) Show that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k? a) $f(x) = patent beace$ $g(x) = f(x - h) + k$ $south to the Right by h units$ the mapping: $(x, y) \Rightarrow (x + h, y + k)$ you can you can calculate excludible the the new x first x the new x first x the new y first x the new y first y has no effect on the new y first y y	Thursda	y, February 13	, 2025 10:05	AM						
is transformed to the graph of $y = f(x - h) + k$ a) Show that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k ? a) $f(x) = patent$ becally a south to the Right by h units. f(x) = $f(x - h) + k$ south to the Right by h units. the mapping: $(x,y) \Rightarrow (x + h, y + k)$ you can calculate the east x first x the paul x first x to x first										
a) Show that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k? (a) If (x): parent bear of the Right by h. units (x): for the Right by h. units the mapping: (x,y) = (x+h, y+h) you can be always from the record of the new x first the new x first the new x first the new x first the new y. the new x calculation the new y. the notific the two will not written since the two different channes and x and y. do not affect each other. If Another way to prove this is objetanic. g(x): f(x-h) + h. let's take an example parent: f(x) = x² then florig. Sh. 1st: g(x): f(x-h) = (x-h) + h. = g(x)										
a) Show that the order in which you apply translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k? a) I (x)- parent beae shift up boy k units: g(x) = f(x-h)+ k suit to the Right by h units the mapping: (x,y) -> (x+h, y+k) you can calculate calculate the the new y and it the new y. the new y. the new y. the order will not matter to fine the two different calculations the order will not matter 5 ince the two different calculations the order will not when said y do not affect each officer. 4 Another way to prove thus is algebraic: g(x) = f(x-h)+ k let's take an example pacent: f(x) = x² then f Horiz. Sh. 1st: g(x) = f(x-h) (x. Sh. 2nd: g(x) = g(x) + k = g(x)				e graph of						
translations does not matter. Explain why this is true. b) How are the domain and range affected by the parameters h and k? a) $f(x) = parameters h$ beal $g(x) = f(x-h) + b$ $g(x) = g(x) + $				der in which vo	ou apply					
b) How are the domain and range affected by the parameters h and k? a) $f(x)= \text{ patent beae} \\ g(x)= f(x-h)+h \\ \text{ skipt to the Right by h. units}$ the mapping: $(x,y) \Rightarrow (x+h), g+h \\ \text{ the mapping:}$ $(x,y) \Rightarrow (x+h), g+h \\ \text{ the new a first} \\ \text{ the order will not} \\ the $		transl	ations does							
by the parameters h and k ? $f(x): parent beae = swift up by k units$ $g(x)=f(x-h)+k$ $swift fo the Right by h units$ the mapping: $(x,y) \rightarrow (x+h), g+k$ $you can calculate exclusion to the tentus x first new y after the new y. In the new y. In the new y. In the x calculation on the x calculation of the new y. In the new$					ee . 1					
a) $f(x)$: patent beae $g(x) = f(x-h) + k$ $g(x) = f(x-h) + k$ Swift to the Right by k units the mapping: $(x,y) \rightarrow (x+h), (g+k)$ you can calculate advantate the tac new x first at has no effect on the x calculate the new y . on the x calculation the order will not matter y since the two deficients of y and y are y and y are y and y are y and y are y . y Another way to prove this is objective. y Another way to prove this is objective. y Another way to prove this is objective. y Another way to prove this y is objective. y Another y is y in y				_	affected					
south to the Right by h units the mapping: $(x,y) \rightarrow (x+h, y+h)$ you can calculate the tax new x first new x first new x first has no effect on the and the the new y. on the x calculation the order will not matter 5 ince the two different climensions x and y do not affect each other. 4 Another way to prove this is objectaic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then forig. Sh. 1st: $g_1(x) = f(x-h) = (x-h)^2$ $(x) = f(x) = f(x)$ V. Sh. 2nd: $g_2(x) = g(x) + h$ $f(x) = g(x)$		by the	purumotor	on una x.						
south to the Right by h units the mapping: $(x,y) \rightarrow (x+h, y+h)$ you can calculate the tax new x first new x first new x first has no effect on the and the the new y. on the x calculation the order will not matter 5 ince the two different climensions x and y do not affect each other. 4 Another way to prove this is objectaic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then forig. Sh. 1st: $g_1(x) = f(x-h) = (x-h)^2$ $(x) = f(x) = f(x)$ V. Sh. 2nd: $g_2(x) = g(x) + h$ $f(x) = g(x)$										
south to the Right by h units the mapping: $(x,y) \rightarrow (x+h, y+h)$ you can calculate the tax new x first new x first new x first has no effect on the and the the new y. on the x calculation the order will not matter 5 ince the two different climensions x and y do not affect each other. 4 Another way to prove this is objectaic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then forig. Sh. 1st: $g_1(x) = f(x-h) = (x-h)^2$ $(x) = f(x) = f(x)$ V. Sh. 2nd: $g_2(x) = g(x) + h$ $f(x) = g(x)$	a)	40	(x)= paser	it base	shift up by k	units.				
south to the Right by h units the mapping: $(x,y) \rightarrow (x+h, y+h)$ you can calculate the tax new x first new x first new x first has no effect on the and the the new y. on the x calculation the order will not matter 5 ince the two different climensions x and y do not affect each other. 4 Another way to prove this is objectaic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then forig. Sh. 1st: $g_1(x) = f(x-h) = (x-h)^2$ $(x) = f(x) = f(x)$ V. Sh. 2nd: $g_2(x) = g(x) + h$ $f(x) = g(x)$		6	(x)=f(x)	-h)+ k						
the mapping: $(x,y) \rightarrow (x+h,y+h)$ you can calculate the the new x first a hos no effect on too, and it the new y . The new y is no effect on the x calculation The order will not matter 5 ince the two different climensians x and y do not affect each other. 4 Another way to prove this is algebraic: $g(x) = f(x-h) + h$ $ether for your formula for the formula for the$		0		•						
you can calculate the you can calculate the the new x first d has no effect on too and it the new y. The order will not matter 5 ince the two different elimensians x and y do not affect each other. # Another way to prove this is algebraic: g(x)= f(x-h) + h let's take an example parent: f(x)=x² then f Horiz. Sh. 1st: g,(x)= f(x-h) = (x-h)² V. Sh. 2nd: g,(x)= g,(x)+ h = (x-h)²+h			S	wift to the Rigi	I by h units					
you can calculate the you can calculate the the new x first d has no effect on too and it the new y. The order will not matter 5 ince the two different elimensians x and y do not affect each other. # Another way to prove this is algebraic: g(x)= f(x-h) + h let's take an example parent: f(x)=x² then f Horiz. Sh. 1st: g,(x)= f(x-h) = (x-h)² V. Sh. 2nd: g,(x)= g,(x)+ h = (x-h)²+h		1	he massis	(x)	1 2 6	()				
you can calculate the you can calculate the the new x first d has no effect on too and it the new y. The order will not matter 5 ince the two different elimensians x and y do not affect each other. # Another way to prove this is algebraic: g(x)= f(x-h) + h let's take an example parent: f(x)=x² then f Horiz. Sh. 1st: g,(x)= f(x-h) = (x-h)² V. Sh. 2nd: g,(x)= g,(x)+ h = (x-h)²+h		1	re mapping	g: (a,g.		g T Z /				
the order will not watter 5 ince the two different dimensions x and y do not affect each other. # Another way to prove this is algebraic. g(x)= $f(x-h) + h$ let's take an example parent: $f(x)=x^2$ then $f(x) = f(x) = f(x-h) = f(x-h) = f(x-h)^2$ V. Sh. 2rd: $f(x) = f(x) + h$ = $f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) = f(x) = f(x) = f(x)$						You can	1			
the order will not watter 5 ince the two different dimensions x and y do not affect each other. # Another way to prove this is algebraic. g(x)= $f(x-h) + h$ let's take an example parent: $f(x)=x^2$ then $f(x) = f(x) = f(x-h) = f(x-h) = f(x-h)^2$ V. Sh. 2rd: $f(x) = f(x) + h$ = $f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) = f(x) = f(x) = f(x)$					you can calculate	calcula	te the			
the order will not watter 5 ince the two different dimensions x and y do not affect each other. # Another way to prove this is algebraic. g(x)= $f(x-h) + h$ let's take an example parent: $f(x)=x^2$ then $f(x) = f(x) = f(x-h) = f(x-h) = f(x-h)^2$ V. Sh. 2rd: $f(x) = f(x) + h$ = $f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) = f(x) = f(x) = f(x)$					the new or first	new g	first			
the order will not watter 5 ince the two different dimensions x and y do not affect each other. # Another way to prove this is algebraic. g(x)= $f(x-h) + h$ let's take an example parent: $f(x)=x^2$ then $f(x) = f(x) = f(x-h) = f(x-h) = f(x-h)^2$ V. Sh. 2rd: $f(x) = f(x) + h$ = $f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) = f(x) = f(x) = f(x)$				4,	has no effect of	100, a	ud it			
the order will not watter 5 ince the two different dimensions x and y do not affect each other. # Another way to prove this is algebraic. g(x)= $f(x-h) + h$ let's take an example parent: $f(x)=x^2$ then $f(x) = f(x) = f(x-h) = f(x-h) = f(x-h)^2$ V. Sh. 2rd: $f(x) = f(x) + h$ = $f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) + h$ = $f(x) = f(x) = f(x) = f(x) = f(x) = f(x) = f(x)$				73	e new g.	nas no	& calculation)		
matter since the two different dimensions x and y do not affect each other. * Another way to proove this is algebraic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then Horiz. Sh. 1st: $g_1(x) = f(x-h)$ $= (x-h)^2$ V . Sh. 2nd: $g_2(x) = g_1(x) + h$ $= g_2(x)$					\ .	/ / / / / /	Con Con Toll Toll			
matter since the two different dimensions x and y do not affect each other. * Another way to proove this is algebraic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then Horiz. Sh. 1st: $g_1(x) = f(x-h)$ $= (x-h)^2$ V . Sh. 2nd: $g_2(x) = g_1(x) + h$ $= g_2(x)$					7	as will not	-			
different dimensions x and y do not affect each other. * Another way to proove this is algebraic: $g(x) = f(x-h) + h$ let's take an example parent: $f(x) = x^2$ then $\int f(x) + f(x) + f(x) = f(x-h) = (x-h)^2$ $\int f(x) + f(x) + f(x) = f(x) = f(x) + f(x) = f(x) = f(x) + f(x) = f(x) $					The on	del will the	tap			
# Another way to proove this is algebraic: $g(x) = f(x-h) + h$ $let's take an example parent: f(x) = x^{2}$ $then \int_{\mathbb{R}^{2}} Horig. Sh. 1st: g_{1}(x) = f(x-h) = (x-h)^{2}$ $V. Sh. 2nd: g_{2}(x) = g_{1}(x) + h$ $= g(x)$					matter	since The				
# Another way to proove this is algebraic: $g(x) = f(x-h) + h$ $let's take an example parent: f(x) = x^{2}$ $then \int_{\mathbb{R}^{2}} Horig. Sh. 1st: g_{1}(x) = f(x-h) = (x-h)^{2}$ $V. Sh. 2nd: g_{2}(x) = g_{1}(x) + h$ $= g(x)$					different o	imensions a	c aus y			
$g(x) = f(x-h) + h$ $let's take an example parent: f(x) = x^{2}$ $then \begin{cases} Horiz. Sh. 1st: & g_{1}(x) = f(x-h) \\ & = (x-h)^{2} \end{cases}$ $V. Sh. 2nd: & g_{2}(x) = g_{1}(x) + h$ $= g(x)$					do not affect	tach blues	•			
$g(x) = f(x-h) + h$ $let's take an example parent: f(x) = x^{2}$ $then \begin{cases} Horiz. Sh. 1st: & g_{1}(x) = f(x-h) \\ & = (x-h)^{2} \end{cases}$ $V. Sh. 2nd: & g_{2}(x) = g_{1}(x) + h$ $= g(x)$		* 7	Another	way to bro	ove this is al	gebraic.				
let's take an example parent: $f(x) = x^2$ then \(\text{Horiz. Sh. 1st:} \text{g,(x)} = \frac{f(x-h)}{z-h}^2 \\ \text{V. Sh. 2nd:} \text{g_2(x)} = \text{g_2(x)} + \text{b} \\ = \text{g_2(x)} + \text{b} \\ = \text{g_2(x)} + \text{b} \\ = \text{g_2(x)} + \text{b} \\ = \text{g_2(x)} + \text{b} \\ =		r		_						
let's take an example parent: $f(x) = x^2$ then \(\text{Horiz. Sh. 1st:} \text{g,(x)} = \frac{f(x-h)}{z-h} \) $= (x-h)^2$ $V. Sh. 2nd: \text{g_2(x)} = \frac{g(x)}{h} + \text{b} \) = (x-h)^2 + \text{b} \) = g(x)$			g(x)=	= f(x-h)+	la					
then Horizon Sh. 1st: $g_{\lambda}(x) = f(x-h)$ $= (x-h)^{2}$ $V. Sh. 2nd: g_{\lambda}(x) = g(x) + h = (x-h)^{2} + h = g(x)$						P(1) 202				
$\begin{cases} V. Sh. 2nd: & g_2(x) = g(x) + k \\ &= (x - h)^2 + k \\ &= g(x) \end{cases}$			let's	take an exa	imple parent:-	7 (21)=X				
$\begin{cases} V. Sh. 2nd: & g_2(x) = g(x) + k \\ &= (x - h)^2 + k \\ &= g(x) \end{cases}$			then	Horiz, Sh. 1	st ; $q_{i}(x)=$	1(x-h)				
$\begin{cases} V. Sh. 2nd: & g_2(x) = g_1(x) + k \\ &= (x - h)^2 + k \\ &= g(x) \end{cases}$			1.(1,7)	1.011.57.57	-	(x-h)2				
$= (\alpha - h)^2 + b$ $= g(\alpha)$			5							
$= (\alpha - h)^2 + h$ $= g(\alpha)$				V. Sh. 2nd	: 9,(x)=	g(x)+k				
=g(x)						(x 1, 2 - 1)				
					= =	(x-h)+ko				
Now try V , $5h$. 1st $g(x) = f(x) + be$ the $= x^2 + b$						2(0)				
the				y Vish.	18t q. (x)= H	(x)+le				
			the		J' = '	$x^2 + k$				
Y L Ve I Q I I I I I I I I I I I I I I I I I										
order _ H. sh. 2nd: g2(x) = g, (x-h)=			of des	1 H.Sh. 2	$rd: g_2(x) =$	y (2 - n)=				
$=(x-h^2+k)$						(x-h)+k				
=g(a)						9(31)				



