

Fill in the missing parts!

<p>1. VERBALLY</p> <p>7 gallon tank leaks gas 1 gallon every 3 hours.</p>	<p>ALGEBRAICALLY</p> $y = 7 - \frac{1}{3}x$										
<p>NUMERICALLY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TIME (hours)</th> <th>GAS (gallons)</th> </tr> </thead> <tbody> <tr><td>0</td><td>7</td></tr> <tr><td>2</td><td>6.3</td></tr> <tr><td>6</td><td>5</td></tr> <tr><td>3</td><td>6</td></tr> </tbody> </table>	TIME (hours)	GAS (gallons)	0	7	2	6.3	6	5	3	6	<p>GRAPHICALLY</p>
TIME (hours)	GAS (gallons)										
0	7										
2	6.3										
6	5										
3	6										

<p>2. VERBALLY</p> <p>Bob owes Sara 4 pencils. He gives her 1 pencil every 3 days.</p>	<p>ALGEBRAICALLY</p> $p(t) = \frac{1}{3}t - 4$										
<p>NUMERICALLY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TIME (days)</th> <th>PENCILS (#)</th> </tr> </thead> <tbody> <tr><td>0</td><td>-4</td></tr> <tr><td>7</td><td>-1.6</td></tr> <tr><td>24</td><td>4</td></tr> <tr><td>-90</td><td>-34</td></tr> </tbody> </table>	TIME (days)	PENCILS (#)	0	-4	7	-1.6	24	4	-90	-34	<p>GRAPHICALLY</p>
TIME (days)	PENCILS (#)										
0	-4										
7	-1.6										
24	4										
-90	-34										

<p>3. VERBALLY</p> <p>You have raised 30% of your goal. Every 2 hours you raise 10% of your goal.</p>	<p>ALGEBRAICALLY</p> $y = \frac{10}{2}x + 30$ $y = 5x + 30$										
<p>NUMERICALLY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Hours</th> <th>%</th> </tr> </thead> <tbody> <tr><td>2</td><td>40</td></tr> <tr><td>4</td><td>50</td></tr> <tr><td>6</td><td>60</td></tr> <tr><td>8</td><td>70</td></tr> </tbody> </table>	Hours	%	2	40	4	50	6	60	8	70	<p>GRAPHICALLY</p> <p style="text-align: center; color: red;">y-scale is by 10's</p>
Hours	%										
2	40										
4	50										
6	60										
8	70										

<p>4. VERBALLY</p> <p>You have no money. You make 2 Euros every hour.</p>	<p>ALGEBRAICALLY</p> $y = 2x$										
<p>NUMERICALLY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TIME (hours)</th> <th>MONEY (Euros)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>2</td></tr> <tr><td>2</td><td>4</td></tr> <tr><td>3</td><td>6</td></tr> </tbody> </table>	TIME (hours)	MONEY (Euros)	0	0	1	2	2	4	3	6	<p>GRAPHICALLY</p>
TIME (hours)	MONEY (Euros)										
0	0										
1	2										
2	4										
3	6										

If $f(x) = 4 - 3x$ and $g(x) = 2x^2 - 3x + 1$ then find...

<p>5. $f(4) = 4 - 3(4)$ $= 4 - 12$ $f(4) = -8$</p>	<p>6. $g(-5) = 2(-5)^2 - 3(-5) + 1$ $= 2(25) + 15 + 1$ $= 50 + 15 + 1$ $g(-5) = 66$</p>	<p>7. $g(a) = 2a^2 - 3a + 1$</p>	<p>8. $f(m+1) = 4 - 3(m+1)$ $= 4 - 3m - 3$ $f(m+1) = 1 - 3m$</p>
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If $f(x) = 4 - 3x$ and $g(x) = 2x^2 - 3x + 1$ then find...

9. $g(x+2) =$

$$= 2(x+2)^2 - 3(x+2) + 1$$

$$= 2(x^2 + 4x + 4) - 3x - 6 + 1$$

$$= 2(x^2 + 2x + 2x + 4) - 3x - 5$$

$$= 2x^2 + 8x + 8 - 3x - 5$$

$$g(x+2) = 2x^2 + 5x + 3$$

10. $f(x) = 10$

$$10 = 4 - 3x$$

$$\underline{-4} \quad \underline{-4}$$

$$6 = -3x$$

$$\underline{-3} \quad \underline{-3}$$

$$-2 = x$$

11. $f(x) = 21$

$$21 = 4 - 3x$$

$$\underline{-4} \quad \underline{-4}$$

$$17 = -3x$$

$$\underline{-3} \quad \underline{-3}$$

$$x = -\frac{17}{3}$$

12. $f(0) + g(1) =$

$$f(0) = 4 - 3(0)$$

$$f(0) = 4$$

$$g(1) = 2(1)^2 - 3(1) + 1$$

$$g(1) = 0$$

$$4 + 0 = 4$$

If $h(x) = \frac{2x}{x+1}$ and $k(x) = \sqrt{2x-5}$ then find...

13. $h(4) =$

$$= \frac{2(4)}{4+1}$$

$$= \frac{8}{5}$$

$$h(4) = \frac{8}{5}$$

14. $k(5) =$

$$= \sqrt{2(5)-5}$$

$$= \sqrt{10-5}$$

$$= \sqrt{5}$$

$$k(5) = \sqrt{5}$$

15. $h(m) =$

$$h(m) = \frac{2m}{m+1}$$

16. $k(m+1) =$

$$= \sqrt{2(m+1)-5}$$

$$= \sqrt{2m+2-5}$$

$$k(m+1) = \sqrt{2m-3}$$

17. $h(x+2) =$

$$= \frac{2(x+2)}{(x+2)+1}$$

$$h(x+2) = \frac{2x+4}{x+3}$$

18. $k(x) = 10$

$$10 = \sqrt{2x-5}$$

$$100 = 2x - 5$$

$$\underline{+5} \quad \underline{+5}$$

$$\frac{105}{2} = \frac{2x}{2}$$

$$52.5 = x$$

19. $h(x) = 4$

$$(x+1)4 = \frac{2x}{x+1}$$

$$4x+4 = 2x$$

$$\underline{-4x} \quad \underline{-4x}$$

$$4 = -2x$$

$$\underline{-2} \quad \underline{-2}$$

$$-2 = x$$

20. $h(0) + k(15) =$

$$h(0) = \frac{2(0)}{0+1}$$

$$h(0) = \frac{0}{1} = 0$$

$$k(15) = \sqrt{2(15)-5}$$

$$k(15) = \sqrt{25}$$

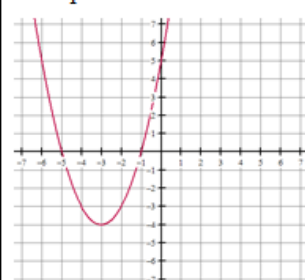
$$k(15) = 5$$

$$0 + 5 = 5$$

Review Skillz

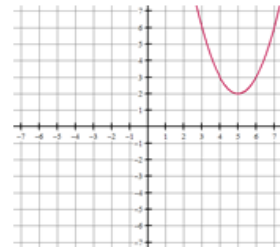
Write the equation of the quadratic function in vertex form, $y = a(x-h)^2 + k$. See example for a refresher!

Example:



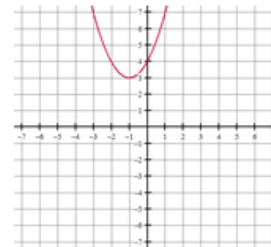
$$y = (x+3)^2 - 4$$

1.



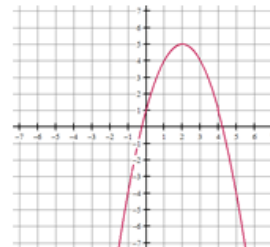
$$y = (x-5)^2 + 2$$

2.



$$y = (x+1)^2 + 3$$

3.



$$y = -(x-2)^2 + 5$$