Review Warm-up, Week 12 (#3.3)

1. A ball on an unknown planet is tossed upward. Its height can be modeled by the quadratic function

$h\left(t\right)=-7t^{2}+7t+84$.

* 1. Determine the values of $a, b, $and$ c$.
	2. How long will it take for the ball to reach the ground after it has been tossed?
	3. Find the maximum height the ball will reach.
1. Solve the system of equations algebraically over the set of real numbers.

$$\left\{\begin{array}{c}y=2x-5 \\y=4x^{2}+10x-17\end{array}\right.$$

(continued) Review Warm-up, Week 12 (#3.3)



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Use the piecewise function equation below to fill in each of the three tables.

$$f\left(x\right)=\left\{\begin{array}{c}2x\\-x+1\\-3\end{array}\right., \genfrac{}{}{0pt}{}{-4<x\leq -2}{\begin{array}{c}-2<x\leq 5\\5<x\leq 9\end{array}}$$

|  |  |  |
| --- | --- | --- |
| Piece 1: $y=2x$ | Piece 2:$y=-x+1$ | Piece 3:$ y=-3$ |
|

|  |  |  |
| --- | --- | --- |
| *x* | *y* | *clicker* |
| -4 |  | $$\leftarrow Q1$$ |
| -2 |  | $$\leftarrow Q2$$ |

 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |
| --- | --- | --- |
| *x* | *y* | *clicker* |
| -2 |  | $$\leftarrow Q3$$ |
| 5 |  | $$\leftarrow Q4$$ |

 |

 |

|  |  |  |
| --- | --- | --- |
| *x* | *y* | *clicker* |
| 5 |  | $$\leftarrow Q5$$ |
| 9 |  | $$\leftarrow Q6$$ |

 |

(continued) Review Warm-up, Week 12 (#3.3)

Grace is a truck driver. Monday, she drove ***55 miles an hour for 2 hours,*** then ***30 miles an hour for 3 hours***. She ***stopped for 1 hour*** for lunch before she got back on the road and drove ***60 miles an hour for 5 hours.*** Fill in the table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Hours | Miles  | *clicker* |  | Hours | Miles  | *clicker* |
| 0 |  | $$\leftarrow Q1$$ |  | 6 |  | $$\leftarrow Q5$$ |
| 1 |  |  |  | 7 |  | $$\leftarrow Q6$$ |
| 2 |  | $$\leftarrow Q2$$ |  | 8 |  |  |
| 3 |  | $$\leftarrow Q3$$ |  | 9 |  |  |
| 4 |  |  |  | 10 |  |  |
| 5 |  | $$\leftarrow Q4$$ |  | 11 |  | $$\leftarrow Q7$$ |

(continued) Review Warm-up, Week 12 (#3.3)

Copy the tables below. Then, for each table,

**identify the slope** $=\left(\frac{change in y side of the table}{change in x side of the table}\right)$,

and **the** $y$ **-intercept** $($the value of$ y $when$ x=0)$.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| $$x$$ | $$y$$ |  | $$x$$ | $$y$$ |  | $$x$$ | $$y$$ |
| 0 | 10 |  | 0 |  |  | 0 |  |
| 2 | 6 |  | 2 |  |  | 2 |  |
| 4 | 2 |  | 4 |  |  | 4 |  |
| 6 | -2 |  | 6 | -2 |  | 6 |  |
| 8 | 10 |  | 8 | 10 |  | 8 |  |
| 10 | 22 |  | 10 | 22 |  | 10 | 22 |
| 12 | 21 |  | 12 |  |  | 12 | 21 |
| 14 | 20 |  | 14 |  |  | 14 | 20 |
| 16 | 19 |  | 16 |  |  | 16 | 19 |