**Grade 7 Unit 1: Patterns & Relations – PacticeTest**

1. For each of the following charts,

i) Write the relations as an algebraic expression

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Term Number |  1 | 2 | 3 | 4 | 5 | 6 |
| Term | 15 | 17 | 19 | 21 | 23 | 25 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Term Number |  1 | 2 | 3 | 4 | 5 | 6 |
| Term | 6 | 11 | 16 | 21 | 26 | 31 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Term Number |  1 | 2 | 3 | 4 | 5 | 6 |
| Term | 10 | 20 | 30 | 40 | 50 | 60 |

1. The pizza guy gets paid **$20**, plus **an extra $5 for each delivery.**
	1. Write the relation of people to total cost as an algebraic expression using “p”.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Complete a chart that relates the total cost to the number people.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| #of people |  1 | 2 | 3 | 4 | 5 | 6 |
| Total Cost |  |  |  |  |  |  |

* 1. How much would he make if 50 people ordered a pizza? (SHOW YOUR WORK)
	2. If the cost of delivery doubles what would be the new expression? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Graph the chart in part (a) on the provided graph paper. Make sure to label the x, y axis. Put a title on the graph and on BOTH axis. Plot the points.



1. **SIMPLIFY** then **evaluate** each of the following: (Colors may help)
	1. 8x+7-6+5a-4x-7a , x = 3 & a = 5
2. Write an algebraic expression for each the following. (Let “n” represent a number)
3. 27 more than a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The product of 4 and a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 7 more than double a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Evaluate 7f + 7 for f= 6 (Show all work)

1. Translate the following word problems into algebraic expressions:
	1. John is tracking the height of a plant he's growing. The plant starts at 5 inches tall and grows 2 inches per week. Write an algebraic expression to represent the height of the plant after 'w' weeks.
	2. Mary is paid $12 per hour for her part-time job. If she works 'h' hours in a week, write an algebraic expression to represent her weekly earnings.
	3. The temperature in a town starts at 68 degrees Fahrenheit in the morning and decreases by 4 degrees per hour. Write an algebraic expression to represent the temperature 't' hours after the morning.