

## G6-M4-Lessons 20/21/22 Solutions

- A radio station plays 12 songs each hour. They never stop for commercials, news, weather, or traffic reports.
  - Write an expression describing how many songs are played by the radio station in  $H$  hours.  
 $12H$
  - How many songs will be played in an entire day (24 hours)?  
 $12 \cdot 24 = 288$ . *There will be 288 songs played.*
  - How long does it take the radio station to play 60 consecutive songs?  
 $60 \text{ songs} \div 12 \frac{\text{songs}}{\text{hour}} = 5 \text{ hours}$

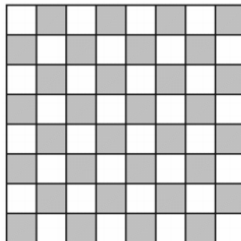
- A ski area has a high-speed lift that can move 2,400 skiers to the top of the mountain each hour.
  - Write an expression describing how many skiers can be lifted in  $H$  hours.  
 $2,400H$
  - How many skiers can be moved to the top of the mountain in 14 hours?  
 $14 \cdot 2,400 = 33,600$ . *33,600 skiers can be moved.*
  - How long will it take to move 3,600 skiers to the top of the mountain?  
 $3,600 \div 2,400 = 1.5$ . *It will take an hour and a half to move 3,600 skiers to the top of the mountain.*

- Polly writes a magazine column, for which she earns \$35 per hour. Create a table of values that shows the relationship between the number of hours that Polly works,  $H$ , and the amount of money Polly earns in dollars,  $E$ .  
*Answers will vary. Sample answers are shown.*

Hours Polly Works ( $H$ )	Polly's Earnings in Dollars ( $E$ )
1	35
2	70
3	105
4	140

- If you know how many hours Polly works, can you determine how much money she earned? Write the corresponding expression.  
*Multiplying the number of hours that Polly works by her rate (\$35 per hour) will calculate her pay.  $35H$  is the expression for her pay in dollars.*

- A checkerboard has 64 squares on it.



- If one grain of rice is put on the first square, 2 grains of rice on the second square, 4 grains of rice on the third square, 8 grains of rice on the fourth square, and so on (doubling each time), complete the table to show how many grains of rice are on each square. Write your answers in exponential form on the table below.

Checkerboard Square	Grains of Rice	Checkerboard Square	Grains of Rice	Checkerboard Square	Grains of Rice	Checkerboard Square	Grains of Rice
1	$2^0$	17	$2^{16}$	33	$2^{32}$	49	$2^{48}$
2	$2^1$	18	$2^{17}$	34	$2^{33}$	50	$2^{49}$
3	$2^2$	19	$2^{18}$	35	$2^{34}$	51	$2^{50}$
4	$2^3$	20	$2^{19}$	36	$2^{35}$	52	$2^{51}$
5	$2^4$	21	$2^{20}$	37	$2^{36}$	53	$2^{52}$
6	$2^5$	22	$2^{21}$	38	$2^{37}$	54	$2^{53}$
7	$2^6$	23	$2^{22}$	39	$2^{38}$	55	$2^{54}$
8	$2^7$	24	$2^{23}$	40	$2^{39}$	56	$2^{55}$
9	$2^8$	25	$2^{24}$	41	$2^{40}$	57	$2^{56}$
10	$2^9$	26	$2^{25}$	42	$2^{41}$	58	$2^{57}$
11	$2^{10}$	27	$2^{26}$	43	$2^{42}$	59	$2^{58}$
12	$2^{11}$	28	$2^{27}$	44	$2^{43}$	60	$2^{59}$
13	$2^{12}$	29	$2^{28}$	45	$2^{44}$	61	$2^{60}$
14	$2^{13}$	30	$2^{29}$	46	$2^{45}$	62	$2^{61}$
15	$2^{14}$	31	$2^{30}$	47	$2^{46}$	63	$2^{62}$
16	$2^{15}$	32	$2^{31}$	48	$2^{47}$	64	$2^{63}$