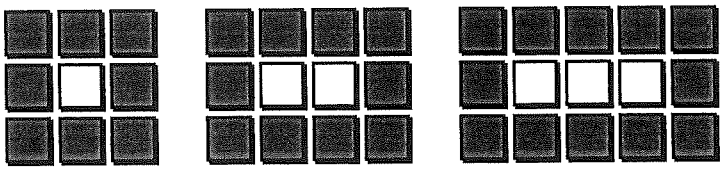
CW 20

Pattern graFUN

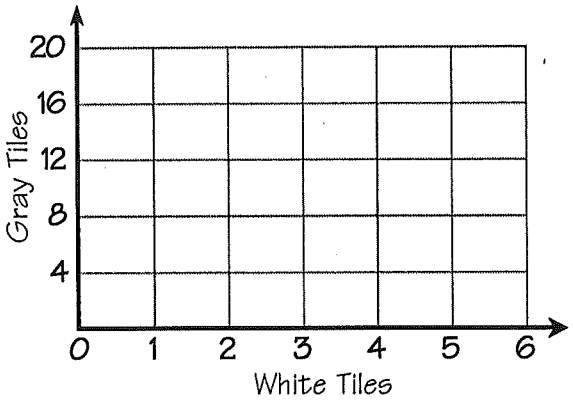
For each exercise, complete the T-table and graph. Then answer the question that is asked.



Tile Pattern. Draw the next two figures in the pattern of tiles shown above. Show how the number of gray tiles varies with the number of white tiles.

How many gray tiles would be needed for 10 white tiles?

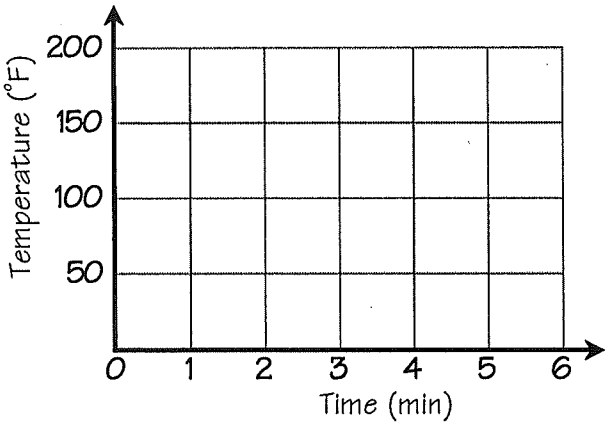
white	gray
1	
2	
3	
4	
5	



Hot Water. A pot of water at a temperature of 60°F is placed on a hot burner. The water temperature increases at a rate of 25° per minute. Show how the temperature of the water depends on the time on the burner.

About how long will it take for the water to reach 212°F?

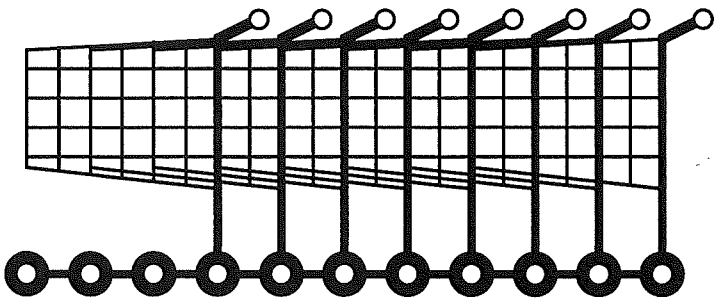
time (min)	temp (°F)
0	
1	
2	
3	
4	
5	

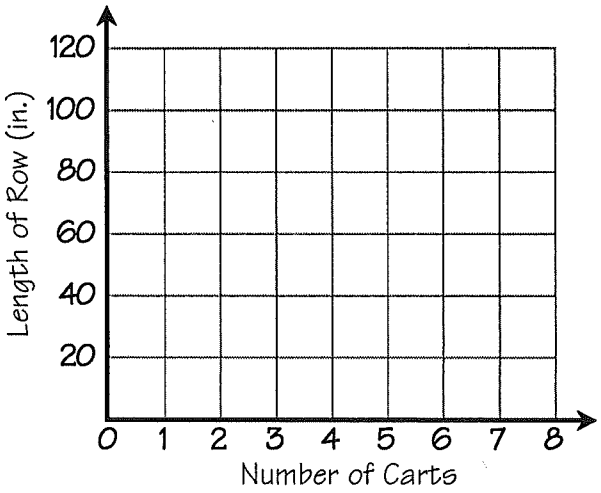


Grocery Carts. The drawing below shows a row of grocery carts that have been "nested" together. The carts are each 32 in. long. Each cart after the first adds 11 in. to the length of the row. Show how the length of the row depends on the number of carts.

What would be the length of a row of 20 nested carts?

number of carts	length (in.)
1	
2	
3	
4	
5	
6	
7	





CHALLENGE:
Can you write a formula for the length of a row of n carts, where n is the number of carts in the row?

$L =$

S2

HW 20

How Was the Wooden Marionette Related to the Wooden Hockey Stick?

Find each answer in the adjacent answer columns. Write the letter of the answer in the box containing the number of the exercise.

Evaluate for $x = 4$.

1. $9x$ **2.** $2x + 7$ **3.** x^2

4. $\frac{5x}{2}$ **5.** $3x^2$ **6.** $(3x)^2$

S. 13 **H.** 15
Y. 10 **O.** 92
T. 36 **H.** 48
A. 144 **E.** 16

Evaluate for $a = 7$ and $b = 2$.

7. $6ab$ **8.** $8a - 5b$ **9.** ab^2

10. $a^2 + b^2$ **11.** $(a + b)^2$ **12.** $(a - b)^3$

13. $\frac{4a + 6b}{5}$ **14.** $b^3(a - 2b)$ **15.** $\frac{a^2b + 1}{a + b}$

E. 53 **A.** 125
F. 11 **D.** 84
T. 46 **T.** 90
M. 8 **S.** 81
H. 28 **E.** 24

The number of diagonals for a polygon is given by the formula: $T = \frac{n(n - 3)}{2}$, where n is the number of sides. Find T if

16. $n = 6$ **17.** $n = 10$ **18.** $n = 20$

I. 170
E. 22
A. 9
T. 144
M. 35

The distance traveled by a moving object is given by the formula: $d = rt$, where r is speed and t is time. Find d if

19. $r = 60$ mph, $t = 3.5$ h **20.** $r = 96$ m/s, $t = 15$ s **21.** $r = 300$ ft/min, $t = 5.2$ min

Y. 1440 m
R. 1640 ft
T. 1560 ft
L. 210 mi
O. 1280 m

The volume of a square pyramid is given by the formula: $V = \frac{hw^2}{3}$, where h is height and w is a side of the base. Find V if

22. $h = 9$ cm, $w = 4$ cm **23.** $h = 5$ in., $w = 6$ in. **24.** $h = 3$ ft, $w = 10$ ft

A. 72 in.^{3}
E. 100 ft^3
R. 48 cm^3
H. 44 cm^3
E. 60 in.^{3}

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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