

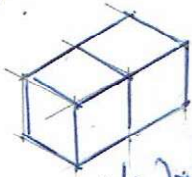
A-arrangement



A-arrangement



$$1 \times 2 + 1 = 3$$



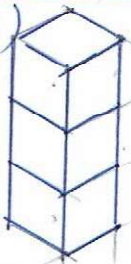
$$1 \times 2 + 2 = 4$$

(Z-arrangement)

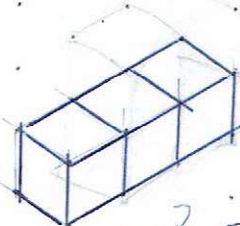


$$1 \times 2 + 2 = 4$$

(A)



$$2 \times 2 + 1 = 5$$



$$2 \times 2 + 3 = 7$$



$$2 \times 2 + 2 = 6$$

(Z)

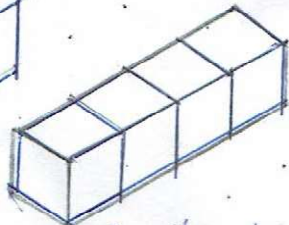


$$2 \times 2 + 3 = 7$$

(A)



$$3 \times 2 + 1 = 7$$

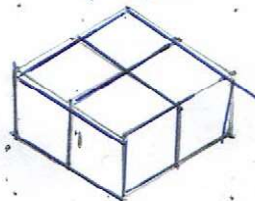


$$3 \times 2 + 4 = 10$$



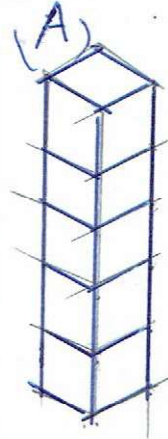
$$4 \times 2 + 2 = 10$$

(Z)

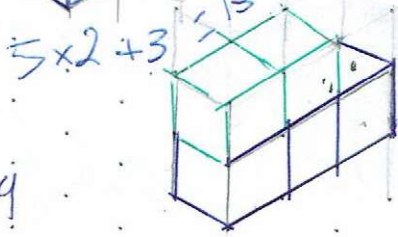
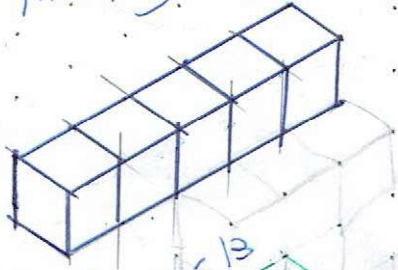


$$4 \times 2 + 4 = 12$$

5



$$4 \times 2 + 5 = 13$$



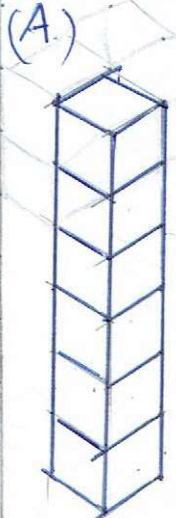
$$4 \times 2 + 1 = 9$$

(Z)

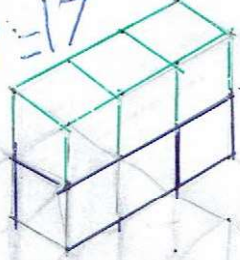


$$5 \times 2 + 5 = 15$$

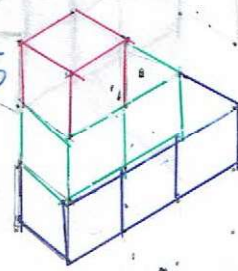
6



$$7 \times 2 + 3 = 17$$

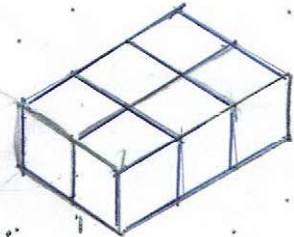


$$6 \times 2 + 3 = 15$$



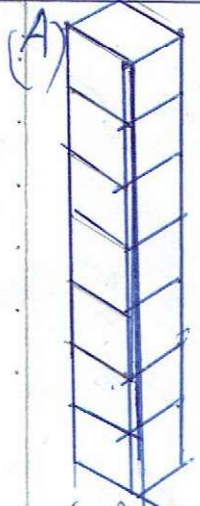
$$5 \times 2 + 1 = 11$$

(Z)

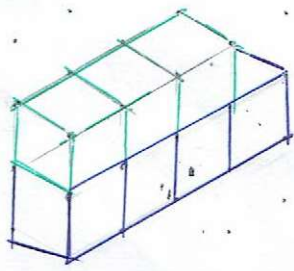


$$7 \times 2 + 6 = 20$$

7

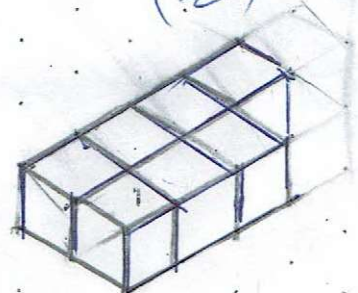


$$8 \times 2 + 4 = 20$$



$$6 \times 2 + 1 = 13$$

(Z)



$$8 \times 2 + 7 = 23$$

Brush Loads

no of cubes	Total no. of faces not covered	Arrangement A total faces covered	Brush Loads A	Arrangement Z	Brush Loads Z
1	$1 \times 6 = 6$	1	$6 - 1 = 5$	1	$6 - 1 = 5$
2	$2 \times 6 = 12$	$1 \times 2 + 1 = 3$	$12 - 3 = 9$	$1 \times 2 + 2 = 4$	$12 - 4 = 8$
3	$3 \times 6 = 18$	$2 \times 2 + 1 = 5$	$18 - 5 = 13$	$2 \times 2 + 3 = 7$	$18 - 7 = 11$
4	$4 \times 6 = 24$	$3 \times 2 + 1 = 7$	$24 - 7 = 17$	$4 \times 2 + 4 = 12$	$24 - 12 = 12$
5	$5 \times 6 = 30$	$4 \times 2 + 1 = 9$	$30 - 9 = 21$	$5 \times 2 + 5 = 15$	$30 - 15 = 15$
6	$6 \times 6 = 36$	$5 \times 2 + 1 = 11$	$36 - 11 = 25$	$7 \times 2 + 6 = 20$	$36 - 20 = 16$
7	$7 \times 6 = 42$	$6 \times 2 + 1 = 13$	$42 - 13 = 29$	$8 \times 2 + 7 = 23$	$42 - 23 = 19$
⋮	⋮	⋮	⋮	⋮	⋮
n	$n \times 6 = 6n$	$(n-1) \times 2 + 1$			

Comments:

Arrangement A has the least no. of faces covered.

Arrangement Z has the most no. of faces covered.

Brush loads = total cube faces - total no. of covered faces

∴ Arrangement A has the most brush loads possible, while

Arrangement Z has the least no. of brush loads possible. All other arrangements give the brush load between both arrangements.