

# Financial Analysis of *Alstonia scholaris* (L) R.Br.

## Reforestation

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### ABSTRACT

The main objectives of this study were to determine rate of monetary return from the investment in *Alstonia scholaris* reforestation at Trad Agro-forestry Research Station, Muang district, Trad province. The financial analysis was undertaken in the plantations with 3 spacing namely 1×1 m, 2×2 m and 4×4 m and with their number of trees per rai were 1,708, 441 and 121, respectively. The given rotations, timber price and discount rates for the financial analysis were 2, 3, 4, 5, 6, 7 and 8 years; 800, 1,000 and 1,200 baht/ton and 4, 6 and 8 percent, respectively. Results of the study indicated that the *Alstonia scholaris* reforestation with spacing 1×1 and 4×4 m provided B/C and NPV less than 1 and 0 respectively, in every given rotation, selling price and discount rate. Hence, the spacing 1×1 and 4×4 m were inappropriate spacing to be applied for *Alstonia scholaris* reforestation. While the *Alstonia scholaris* reforestation with 2×2 m and timber price 1,200 baht/ton, the rotations were at 5, 6 and 7 years provided the highest internal rate of return (IRR) of 5.63, 5.73 and 9.01 percent, respectively. With the same spacing, the rotation and timber price were 7 years and 1,000 and 1,200 baht/ton provided the highest IRR of 4.26 and 9.73 percent respectively; and the rotation and timber price were 8 years, and 1,000 and 1,200 baht/ton provided the highest IRR of 4.78 and 9.45 percent respectively. The relevant problems took place from the reforestation establishment were high density of weeds and low productively of *Alstonia scholaris* timber. The findings from the study will be a fruitful thing for ones who are interested in *Alstonia scholaris* reforestation to applied a guide line for their decision making.

**Key words:** financial analysis, reforestation

### INTRODUCTION

*Alstonia scholaris* is a fast growing tree species. In the recent years, it was widely grown under the government extension project, this because of it's wood property (soft wood, straight grain, and plain coarse texture) is suitable for producing the various products namely article box, sheath, coffin, buoy for purse net, paddle, tea box, toy and

toothpick. (Office of Forest Products Development, 2004). The campaign to encourage farmers to widely establish the reforestation is a way to create a new source of the raw material or to increase timber supply for the domestic wood industries because *Alstonia scholaris* could grow well in every region of the country which having good drainage soil and high moisture. In order to achieve a particular goal of the reforested extension program, the public

relations for the targeted group especially farmers who occupied small or large farm land to broadly interest in *Alstonia scholaris* reforestation investment. Nowadays, the information about cost, revenue and rate of return from *Alstonia scholaris* reforestation is not available. Thus, the findings from this study is not only use for formulating the public relation program but also for decision making on the investment in this enterprise.

The principal of this study is to determine the financial return from *Alstonia scholaris* reforestation investment.

## METHODOLOGY

### Materials

The material used for the study included tape, pole, tally sheet, machine saw, balance, oven, ladder, stationary, computer and statistical software package.

### Data Collection

The collected data were composed of 2 categories:

1. Secondary data. The needed data include the comprehension relating to *Alstonia scholaris* as well as the general information about the study area which were available in the various government agencies such as Faculty of Forestry, Trad Agro-forestry Research Station, Royal Forest Department etc.

2. Primary data. This type of information could be obtained by measuring the standing trees in the sample plots, this including yield, cost and revenue from *Alstonia scholaris* reforestation.

The step for data collection starting from literature review as and interview the ones who participated in *Alstonia scholaris* establishment at Trad Agro-forestry Research Station. The steps for data collection in detail were as follows.

1) Three sample plots were laid out in the *Alstonia scholaris* plantation belong to Trad Agro-Forestry Research Station, and each of them located in each spacing of *Alstonia scholaris* reforestation

namely 1×1 m, 2×2 m, and 4×4 m, and with the size of sample plot of 30×30 m, 40×40 m and 40×40 m, respectively. Number of trees per sample plot and per rai by spacing and size of sample plot were presented in Table 1.

2) Data collection. To measure the various dimensions of the trees standing in each sample plot namely diameter at ground, 0.10 m and 1.30 m above ground and total height, these will be used for calculating the individual tree volume and tree volume per rai.

3) Tree volume calculation. Tree volume could be calculated by measuring the sample trees in each sample plot. The diameter at ground, 0.10 m, 1.10 m, and every 1 m of height interval above ground up to the highest level which having the diameter of 2.5 cm (merchantable height) as well as to measure diameter at 1.30 m above ground and the total height.

4) Tree green weight measurement. The tree green weight could be obtained from determining the relationship between the percentage of moisture and density of *Alstonia* wood. The percentage of moisture and density of the wood could be determine by using the 3 pieces of wood (cross section with 5 cm of thickness) which were cut from a sample *Alstonia scholaris* tree at ground, mid point and tip of the tree. The sample pieces of wood were measured their green weight first after that put them into the oven, and set the temperature at 85°C for 48 hours and then measuring their dry weight.

5) Reforestation cost and revenue. The reforestation cost per rai in each year was obtained by interviewed the personals of Trad Agro-forestry

**Table 1** Number of trees per sample plot and per rai by spacing and size of sample plot.

Spacing	Size of sample plot (m)	No. of studied tree (trees)	Density (trees/rai)
1x1	30x30	961	1,708
2x2	40x40	441	441
4x4	40x40	121	121

Research Station. While the revenue could be calculated by multiplying the yield per rai in term of green weight by timber price.

### Data analysis

1. To calculate merchantable volume of each of 65 sample trees. The merchantable volume of each sample tree was separately calculated by its timber pieces (logs). Smalian's formula was employed for calculating the merchantable volume (Avery and Burkhardt, 1994) as follows:

$$V = \frac{(B+b)}{2} \times L$$

Where:

- $V$  = volume of log ( $m^3$ )
- $B$  = basal area at base of log ( $m^2$ )
- $b$  = basal area at end of log ( $m^2$ )
- $L$  = length of log (m)

2. To calculate merchantable volume of *Alstonia scholaris* stem by using the function (Kira and Shidei, 1967) as follows:

$$Y = a + bD^2H$$

Where:

- $Y$  = stem merchantable volume ( $m^3$ )
- $D$  = diameter at 1.30 m above ground (cm)
- $H$  = total height (m)
- $a$  = intercept
- $b$  = coefficient

3. To predict the yield of *Alstonia scholaris* in year 6 and 7 (the trees weren't measured in year 6 and 7) by using the time trend function as follows:

$$Y_i = f(A_i)$$

Where

- $Y_i$  = estimated tree volume in year  $i$  ( $m^3$ )
- $A_i$  = plantation age (year)
- $i$  = 6 and 7 (year)

4. To calculate timber green weight. *Alstonia scholaris* timber was bought and sold in form of green weight. Therefore, the merchantable volume could be transformed into green weight by using the following formula:

$$m = \frac{(\sigma \times Y)(W + 100)}{100}$$

$m$  = green weight (kg)

$Y$  = merchant table volume ( $m^3$ )

$\sigma$  = density of *Alstonia scholaris* wood ( $kg/m^3$ )

$W$  = percentage of moisture of *Alstonia scholaris* wood

5. Analysis of the financial return. The obtained cost and revenue per rai of *Alstonia scholaris* reforestation was used for analyzing the financial return by spacing and presenting in term of Benefit-cost ratio: B/C; Net Present value: NPV and Internal Rate of return: IRR.

#### 1) Benefit-Cost Ratio (B/C)

$$B/C = \frac{\sum_{t=1}^n \frac{B_t}{(1+i)^t}}{\sum_{t=1}^n \frac{C_t}{(1+i)^t}}$$

Where:

$B_t$  = revenue in year  $t$  (baht)

$C_t$  = cost in year  $t$  (baht)

$i$  = discount rate (4, 6 and 8 %)

$t$  = 1, 2, ... ,n

$n$  = duration of the project or the rotation of *Alstonia scholaris* (the given rotation were 2, 3, 4, 5, 6, 7 and 8)

#### 2) Net present Value (NPV)

$$NPV = \sum_{t=1}^n \frac{B_t}{(1+i)^t} - \sum_{t=1}^n \frac{C_t}{(1+i)^t}$$

#### 3) Internal Rate of Return (IRR)

$$IRR = DR_L + (DR_U - DR_L) \left[ \frac{NPV_L}{NPV_L - NPV_U} \right]$$

Where:

$DR_L$  = discount rate cause  $NPV > 0$

$DR_U$  = discount rate cause  $NPV < 0$

$NPV_L$  = NPV of  $DR_L$

$NPV_U$  = NPV of  $DR_U$

### Places and duration

The study was carried out in Trad Agro-forestry Research Station, Muang district, Trad province, during 1997-2005.

## RESULTS AND DISCUSSION

Financial analysis of *Alstonia scholaris* reforestation with spacing of 1×1 m, 2×2 m and 4×4 m and with number of trees per rai of 1,708, 441 and 121 respectively. The given rotations were at 2, 3, 4, 5, 6, 7 and 8 years. The results of the study were presented as follows:

### Number of tree per rai and rate of survival

From the tree measurement in the sample plot spacing 1×1 m which had 1,708 growing trees at the beginning of the plantation establishment indicated that at the plantation ages of 0.5, 2, 3, 4, 5 and 8 years, their number of tree per rai and percentage survival were declined to be 1,503 trees 88%, 1,447 trees 84.72%, 1,391 trees 81.44%, 1,365 trees 79.92%, 1,356 trees 79.39% and 1,225 trees 71.72%, respectively. While, the number of tree per rai and percentage of survival at the same age classes of the sample plot with spacing 2×2 m which had the number of growing trees of 441 trees per rai, were 437 trees 99.09%, 422 trees 96.60%, 423 trees 95.92 %, 419 trees 95.01 % and 373 trees 84.58%, respectively. The sample plot spacing 4×4 m which had the growing trees of 121 trees per rai, their number of trees per rai and percentage of survival at the same age classes were 120 trees and 99.17%, 118 trees and 97.52%, 117 trees and 96.69%, 114 trees and 94.21%, and 103 trees and 85.12%, respectively.

### Yield of *Alstonia scholaris* timber

Merchantable volume per rai could be calculated from the function which presented the relationship between the merchantable volume per rai (Y) and the square of diameter at breast height multiplied by total height ( $D^2H$ ) as follows:

$$Y = 0.003532 + 0.000035D^2H \quad (1)$$

$$R^2 = 0.9052 \quad F = 601.79^{***}$$

Where: \*\*\* = significance at .01

The equation (1) was used for calculating the merchantable volume per rai of the 3 sample plots with spacing of 1×1 m, 2×2 m, and 4×4 m. The merchantable volume per rai of *Alstonia* plantation with spacing 1×1 m. at age classes of 2, 3, 4, 5 and 8 years were 5.019723, 5.763172, 6.910683, 8.224923 and 13.724920  $m^3$ , respectively. At the same age classes, the merchantable volume per rai of the plantation with spacing 2×2 m and 4×4 m were 1.825243, 3.249011, 4.363628, 4.994665, and 8.525922  $m^3$ ; and 0.508467, 0.869279, 0.924563, 1.218045 and 2.835946  $m^3$ , respectively.

The prediction of merchantable volume per rai of *Alstonia scholaris* reforestation in year 6 and 7 could be carried out by formulating the time trend function for presenting the relationship between the merchantable volume per rai and age of plantations by spacing as follows:

#### 1. Spacing 1×1 m

$$Y = 4.122431 + 0.182167A \\ + 0.127319A^2 \quad (2) \\ R^2 = 0.9999 \quad F = 12,537.4554^{***}$$

Where: \*\*\* significance at .01

Y = estimated merchantable volume per rai in year 6 and 7 ( $m^3$ )

A = age of *Alstonia scholaris* plantation (year)

#### 2. Spacing 2×2 m

$$\ln Y = \ln 0.92251 + 1.078812 \ln A \quad (3) \\ R^2 = 0.9877 \quad F = 242.169^{***}$$

#### 3. Spacing 4×4 m

$$\ln Y = \ln 0.326749 + \\ (\ln 1.309819) A \quad (4) \\ R^2 = 0.9743 \quad F = 242.169^{***}$$

The merchantable volume per rai in year 6 and 7 of *Alstonia scholaris* plantation with spacing 1×1 m, 2×2 m, and 4×4 m, could be estimated by substitute 6 and 7 into equation (2), (3) and (4), respectively. The merchantable volume per rai of *Alstonia scholaris* plantation with spacing 1×1 m,

2×2 m, and 4×4 m in year 6 and 7 were 2.798917 and 11.636230 m<sup>3</sup>, 6.374557 and 7.527885 m<sup>3</sup>, and 1.649993 and 2.161192 m<sup>3</sup>, respectively.

Due to the *Alstonia scholaris* timber was sold and bought in form of green weight, thus the merchantable volume per rai should be transformed into green weight per rai. The green weight per rai of *Alstonia scholaris* plantation with spacing 1×1 m, 2×2 m, and 4×4 m, could be calculated by using their merchantable volume per rai, mean density (420, 470 and 390 Kg/m<sup>3</sup> with spacing 1×1 m, 2×2 m, and 4×4 m, respectively) and mean percentage of moisture (44.75, 57.55 and 57.59 % with spacing 1×1 m, 2×2 m, and 4×4 m, respectively) of *Alstonia scholaris* timber. The green weight per rai of *Alstonia scholaris* plantation with the spacing 1×1 m, 2×2 m, and 4×4 m, and in the year 2, 3, 4, 5, 6, 7 and 8 were 3,051.74, 3,503.72, 4,201.35, 5,000.34, 5,957.25, 7,074.25 and 8,344.05 kg/rai; 1,351.57, 2,405.84, 3,231.20, 3,698.47, 4,720.26, 5,574.29 and 6,313.32 kg/rai; and 312.50, 534.26, 568.24, 748.61, 1,014.09, 1,328.27 and 1,742.92 kg/rai, respectively.

### Cost and revenue from *Alstonia scholaris* reforestation

The reforestation cost per rai included material cost for land preparation, seedlings, stakes, and labour cost for planting and tending. The *Alstonia scholaris* reforestation cost per rai in the first year of the plantation with spacing 1×1 m, 2×2 m, and 4×4 m, were 4,914.80, 1,906.01 and 1,181.10 baht/rai, respectively. The reforestation cost per rai in year 2-8 was only the tending cost, it was fixed with the value of 260 baht/rai for every spacing.

The logging cost by contract basis was 120 baht/ton this including the labour cost for felling, cutting and carrying timber into the truck. Moreover, the transportation cost for removing timber from the plantation to the market with the distance not over than 150 km was 130 baht/ton.

Revenue per rai from *Alstonia scholaris* reforestation could be calculated by multiplying the green weight of timber per rai with the 3 given

selling prices namely 800, 1,000 and 1,200 baht/ton. Findings from the study indicated that the plantation with spacing 1×1 m. provided the highest revenue per rai and the next were the plantation spacing 2×2 m and 4×4 m, respectively.

### Financial analysis

To determine the rate of return from *Alstonia scholaris* reforestation project, the financial analysis methods using 3 criteria namely B/C, NPV and IRR were employed and with the 3 given discount rates of 4, 6 and 8 percent. The results of the study were presented as follows:

1. *Alstonia scholaris* plantation with spacing 1×1 m: at any given timber price level (800, 1,000 and 1,200 baht/ton), rotations (2, 3, 4, 5, 6, 7 and 8 years) and discount rates (4, 6 and 8 percent) provided B/C and NPV less than 1 and 0, this indicated that the investment in *Alstonia scholaris* reforestation under such conditions was not the sound project (Table 2, 3 and 4)

2. The plantation with spacing 2×2 m: when the timber price, rotation and discount rate were 1,000 baht/tons 7 and 8 years, and 4 percent provided B/C and NPV over than 1 and 0, respectively, this indicated that under the given conditions, *Alstonia scholaris* reforestation was the sound project. (Table 2). Moreover, when the timber price was 1,200 baht/ton; the rotations and discount rates were 4, 5, 6, 7 and 8 years, and 4 percent; and 6, 7 and 8 years, and 6 and 8 percent provided B/C and NPV over then 1 and 0 respectively (Table 2, 3 and 4)

In addition, when the timber prices were 1,000 and 1,200 baht/ton and the rotations were at 8 and 7 years provided the highest IRR of 4.78 and 9.73 percent respectively (Table 2). Moreover, when the timber price was 1,200 baht/ton and the rotation was 7 years provided the highest IRR of 9.73 percent (Table 2, 3 and 4). Thus, spacing 2×2 m was the optimal spacing for *Alstonia scholaris* establishment.

3. The plantation with spacing 4×4 m: at any given timber price levels, rotations and discount rates provided B/C and NPV less then 1 and 0, this

**Table 2** B/C, NPV and IRR of *Alstonia scholaris* reforestation at discount rate 4 percent.

Spacing (m)	Rotation (year)	B/C by price :			NPV by price :			IRR		
		800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)
1×1	2	0.40	0.50	0.60	-3,408.56	-2,844.25	-2,279.95	-	-	-
	3	0.42	0.52	0.63	-3,478.38	-2,855.43	-2,232.47	-	-	-
	4	0.46	0.57	0.68	-3,438.54	-2,720.28	-2,002.01	-	-	-
	5	0.49	0.62	0.74	-3,367.02	-2,545.03	-1,723.05	-	-	-
	6	0.54	0.67	0.81	-3,243.50	-2,301.88	-1,360.26	-	-	-
	7	0.58	0.73	0.87	-3,073.82	-1,998.65	-923.49	-	-	-
	8	0.63	0.79	0.94	-2,867.21	-1,647.82	-428.44	-	-	-
	9	-	-	-	-	-	-	-	-	-
2×2	2	0.42	0.52	0.63	-1,385.59	-1,135.97	-886.05	-	-	-
	3	0.60	0.75	0.90	-1,127.97	-700.22	-272.47	-	-	-
	4	0.69	0.86	1.03	-1,007.44	-455.03	97.38	-	-	5.63
	5	0.69	0.87	1.04	-1,068.33	-460.36	147.62	-	-	5.73
	6	0.77	0.96	1.16	-893.97	-147.88	598.22	-	-	9.01
	7	0.81	1.01	1.21	-802.06	33.68	880.88	-	4.26	9.73
	8	0.82	1.03	1.24	-784.65	126.51	1,049.12	-	4.78	9.45
	9	-	-	-	-	-	-	-	-	-
4×4	2	0.16	0.20	0.24	-1,186.36	-1,128.57	-1,070.79	-	-	-
	3	0.22	0.28	0.34	-1,315.18	-1,220.19	-1,125.19	-	-	-
	4	0.20	0.25	0.30	-1,531.51	-1,434.37	-1,337.22	-	-	-
	5	0.23	0.28	0.34	-1,673.95	-1,550.89	-1,427.82	-	-	-
	6	0.27	0.33	0.39	-1,777.04	-1,616.75	-1,456.46	-	-	-
	7	0.30	0.38	0.45	-1,860.27	-1,658.39	-1,456.52	-	-	-
	8	0.35	0.44	0.52	-1,904.93	-1,650.22	-1,395.50	-	-	-
	9	-	-	-	-	-	-	-	-	-

indicated that this spacing was inappropriate for practicing in *Alstonia scholaris* reforestation.

## CONCLUSION AND RECOMMENDATION

The financial analysis of *Alstonia scholaris* reforestation was carried out at Trad Agro-forestry Research Satiation, Muang District, Trad Province. Three sample plots were used for the study, and each of them was laid in *Alstonia scholaris* plantation with spacing 1×1 m, 2×2 m, and 4×4 m. The number of growing trees per rai of the plantations by spacing were 1,708, 441 and 121, respectively. In order to determine the financial rate of return from *Alstonia scholaris* reforestation, the 7 levels of rotation and

3 given discount rates were 2, 3, 4, 5, 6, 7 and 8 years, and 4, 6 and 8 percent, respectively. The findings of the study could be concluded that *Alstonia scholaris* plantation with spacing 1×1 m, and 4×4 m provided B/C and NPV less than 1 and 0 in every given timber price levels (800 baht/ton, 1,000 baht/ton and 1,200 baht/ton), rotations and discount rates. This indicated that the spacing of 1×1 m and 2×2 m were inappropriate to be applied for *Alstonia scholaris* reforestation. In addition, the *Alstonia scholaris* plantation with 2×2 m, at the given timber price of 1,000 baht/ton and at the rotation of 8 years provided the highest cost IRR of 4.78 percent. While, when the given timber price was 1,200 baht/ton, and at the rotation of 7 years provided the highest IRR of 9.73 percent. Hence, the

**Table 3** B/C NPV and IRR of *Alstonia scholaris* reforestation at discount rate 6 percent.

Spacing (m)	Rotation (year)	B/C by price :			NPV by price :			IRR		
		800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)
1×1	2	0.39	0.49	0.59	-3,368.51	-2,825.30	-2,282.09	-	-	-
	3	0.40	0.51	0.61	-3,462.65	-2,874.29	-2,285.93	-	-	-
	4	0.44	0.54	0.65	-3,456.26	-2,790.69	-2,125.12	-	-	-
	5	0.47	0.58	0.70	-3,425.77	-2,678.46	-1,931.15	-	-	-
	6	0.50	0.63	0.75	-3,354.37	-2,514.44	-1,674.52	-	-	-
	7	0.54	0.67	0.81	-3,249.45	-2,308.49	-1,367.54	-	-	-
	8	0.57	0.72	0.86	-3,120.86	-2,073.83	-1,026.80	-	-	-
2×2	2	0.41	0.52	0.62	-1,368.03	-1,127.44	-886.86	-	-	-
	3	0.59	0.73	0.88	-1,136.92	-732.92	-328.92	-	-	-
	4	0.66	0.83	0.99	-1,046.17	-534.29	-22.41	-	-	-
	5	0.66	0.83	0.99	-1,128.10	-575.36	-22.61	-	-	-
	6	0.73	0.91	1.09	-1,001.25	-335.73	329.79	-	-	9.01
	7	0.75	0.94	1.13	-965.38	-223.93	517.52	-	-	9.73
	8	0.76	0.95	1.14	-998.90	-196.68	595.53	-	-	9.45
4×4	2	0.16	0.14	0.24	-1,162.50	-1,106.87	-1,051.25	-	-	-
	3	0.22	0.27	0.33	-1,287.04	-1,197.33	-1,107.61	-	-	-
	4	0.19	0.24	0.29	-1,492.14	-1,402.12	-1,312.10	-	-	-
	5	0.22	0.27	0.32	-1,626.32	-1,514.43	-1,402.55	-	-	-
	6	0.25	0.31	0.37	-1,724.10	-1,581.12	-1,438.14	-	-	-
	7	0.28	0.35	0.42	-1,804.34	-1,627.66	-1,450.99	-	-	-
	8	0.32	0.40	0.48	-1,851.86	-1,633.15	-1,414.43	-	-	-

findings from the study could be used as guideline for formulating the appropriate reforested extension plan for *Alstonia scholaris* reforestation.

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**Table 4** B/C NPV and IRR of *Alstonia scholaris* reforestation at discount rate 8 percent.

Spacing (m)	Rotation (year)	B/C by price :			NPV by price :			IRR		
		800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)	800 (baht/ton)	1,000 (baht/ton)	1,200 (baht/ton)
1×1	2	0.39	0.48	0.58	-3,329.09	-2,805.81	-2,282.54	-	-	-
	3	0.39	0.49	0.59	-3,444.74	-2,888.46	-2,332.19	-	-	-
	4	0.42	0.52	0.62	-3,467.14	-2,849.51	-2,231.89	-	-	-
	5	0.44	0.55	0.66	-3,470.82	-2,790.19	-2,109.56	-	-	-
	6	0.47	0.58	0.70	-3,441.65	-2,690.83	-1,940.02	-	-	-
	7	0.49	0.62	0.74	-3,387.84	-2,562.29	-1,763.73	-	-	-
	8	0.52	0.65	0.78	-3,319.15	-2,417.54	-1,515.93	-	-	-
	2×2	0.41	0.51	0.61	-1,350.51	-1,118.75	-887.00	-	-	-
2×2	3	0.57	0.71	0.86	-1,143.80	-761.84	-379.87	-	-	-
	4	0.64	0.80	0.96	-1,079.05	-604.05	-129.04	-	-	-
	5	0.63	0.79	0.95	-1,177.85	-674.43	-171.01	-	-	-
	6	0.69	0.86	1.03	-1,090.11	-495.19	99.72	-	-	9.01
	7	0.70	0.88	1.06	-1,088.93	-438.41	212.09	-	-	9.73
	8	0.70	0.88	1.06	-1,142.31	-460.13	222.05	-	-	9.45
	4×4	0.16	0.20	0.24	-1,139.53	-1,085.95	-1,032.36	-	-	-
	3	0.21	0.27	0.32	-1,260.02	-1,175.20	-1,090.37	-	-	-
4×4	4	0.19	0.23	0.28	-1,454.67	-1,371.14	-1,287.60	-	-	-
	5	0.20	0.26	0.31	-1,581.13	-1,479.23	-1,377.33	-	-	-
	6	0.23	0.29	0.35	-1,673.72	-1,554.91	-1,418.10	-	-	-
	7	0.26	0.33	0.39	-1,750.62	-1,595.62	-1,440.61	-	-	-
	8	0.30	0.37	0.44	-1,799.45	-1,611.11	-1,422.78	-	-	-

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