

**Additional Problems**

1. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 3 years.

Solution: Divide \$100,000 by 3 to get \$33,333.33 per year

**Year      Depreciation Expense**

1	\$33,333.33
2	\$33,333.33
3	\$33,333.33

2. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 5 years.

Solution: Divide \$100,000 by 5 to get \$20,000.00 per year

**Year      Depreciation Expense**

1	\$20,000.00
2	\$20,000.00
3	\$20,000.00
4	\$20,000.00
5	\$20,000.00

3. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 7 years.

Solution: Divide \$100,000 by 7 to get \$14,285.71 per year

**Year      Depreciation Expense**

1	\$14,285.71
2	\$14,285.71
3	\$14,285.71
4	\$14,285.71
5	\$14,285.71
6	\$14,285.71
7	\$14,285.71

4. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 3 years. Use the half-year convention.

Solution: Divide \$100,000 by 3 to get \$33,333.33 per year. Adjust the first for half of that amount.

<b>Year</b>	<b>Depreciation Expense</b>
1	\$16,666.67
2	\$33,333.33
3	\$33,333.33
4	\$16,666.67

5. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 5 years. Use the half-year convention.

Solution: Divide \$100,000 by 5 to get \$20,000.00 per year. Adjust the first year for half that amount.

<b>Year</b>	<b>Depreciation Expense</b>
1	\$10,000.00
2	\$20,000.00
3	\$20,000.00
4	\$20,000.00
5	\$20,000.00
6	\$10,000.00

6. Calculate the straightline depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 7 years. Use the half-year convention.

Solution: Divide \$100,000 by 7 to get \$14,285.71 per year. Adjust the first year for half that amount.

<b>Year</b>	<b>Depreciation Expense</b>
1	\$7,142.87
2	\$14,285.71
3	\$14,285.71
4	\$14,285.71
5	\$14,285.71
6	\$14,285.71
7	\$14,285.71
8	\$7,142.87

7. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 3 years. Use double declining balance.

Solution: Divide 100 by 3 to get 33.33%. Multiply by 2 to get 66.67% That is the rate that will be multiplied by the adjusted base.

<b>Year</b>		<b>Adjusted Base</b>	<b>x</b>	<b>.6667</b>	<b>Depreciation Expense</b> (rounded to nearest \$)
1		100,000		.6667	\$66,670
2	100,000 – 66,670	33,330		.6667	\$22,221
3	33,330 – 22,221	11,109		.6667	\$7,406

8. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 5 years. Use double declining balance.

Solution: Divide 100 by 5 to get 20%. Multiply by 2 to get 40% That is the rate that will be multiplied by the adjusted base.

<b>Year</b>		<b>Adjusted Base</b>	<b>x</b>	<b>.40</b>	<b>Depreciation Expense</b> (rounded to nearest \$)
1		100,000		.40	\$40,000
2	100,000 – 40,000	60,000		.40	\$24,000
3	60,000 – 24,000	36,000		.40	\$14,400
4	36,000 – 14,400	21,600		.40	\$8,640
5	21,600 – 8,640	12,960		.40	\$5,184

9. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 7 years. Use double declining balance.

Solution: Divide 100 by 7 to get 14.285%. Multiply by 2 to get 28.57% That is the rate that will be multiplied by the adjusted base.

<b>Year</b>		<b>Adjusted Base</b>	<b>x</b>	<b>.2857</b>	<b>Depreciation Expense</b> (rounded to nearest \$)
1		100,000		.2857	\$28,570
2	100,000 – 28,570	71,430		.2857	\$20,408
3	71,430 – 20,408	51,022		.2857	\$14,577
4	51,022 – 14,577	36,445		.2857	\$10,412
5	36,445 – 10,412	26,033		.2857	\$7,438
6	26,033 – 7,438	18,595		.2857	\$5,313
7	18,595 – 5,313	13,282		.2857	\$3,795

10. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 3 years. Use double declining balance with the half-year convention.

Solution: Divide 100 by 3 to get 33.33%. Multiply by 2 to get 66.67% That is the rate that will be multiplied by the adjusted base. Adjust the first year's depreciation rate by half.

Year		Adjusted Base	x	.6667	Depreciation Expense (rounded to nearest \$)
1		100,000		.6667 / 2	\$33,335
2	100,000 – 33,335	66,665		.6667	\$44,466
3	66,665 – 44,466	22,199		.6667	\$14,800
4	22,199 – 14,800	7,399		.6667 / 2	\$2,466

11. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 5 years. Use double declining balance with the half-year convention.

Solution: Divide 100 by 5 to get 20%. Multiply by 2 to get 40% That is the rate that will be multiplied by the adjusted base. Adjust the first year by half.

Year		Adjusted Base	x	.40	Depreciation Expense (rounded to nearest \$)
1		100,000		.40 / 2	\$20,000
2	100,000 – 20,000	80,000		.40	\$32,000
3	80,000 – 32,000	48,000		.40	\$19,200
4	48,000 – 19,200	28,800		.40	\$11,520
5	28,800 – 11,520	17,280		.40	\$6,912
6	17,289 – 6,912	10,377		.40 / 2	\$2,075

12. Calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 7 years. Use double declining balance with the half-year convention.

Solution: Divide 100 by 7 to get 14.285%. Multiply by 2 to get 28.57% That is the rate that will be multiplied by the adjusted base. The first year will be adjusted by half.

Year		Adjusted Base	x	.2857	Depreciation Expense (rounded to nearest \$)
1		100,000		.2857 / 2	\$14,285
2	100,000 – 14,285	85,715		.2857	\$24,489
3	85,715 – 24,489	61,226		.2857	\$17,492
4	61,226 – 17,492	43,734		.2857	\$12,495
5	43,734 – 12,495	31,239		.2857	\$8,925
6	31,239 – 8,925	22,314		.2857	\$6,375
7	22,314 – 6,375	15,939		.2857	\$4,554
8	15,939 – 4,554	11,385		.2857 / 2	\$1,626

13. Using MACRS, calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 3 years.

Solution:

<b>Year</b>	<b>Base</b>	<b>x</b>	<b>Rate</b>	<b>Depreciation Expense</b>
1	100,000		.3333	\$33,330
2	100,000		.4445	\$44,450
3	100,000		.1481	\$14,810
4	100,000		.0741	\$7,410

14. Using MACRS, calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 5 years.

Solution:

<b>Year</b>	<b>Base</b>	<b>x</b>	<b>Rate</b>	<b>Depreciation Expense</b>
1	100,000		.2000	\$20,000
2	100,000		.3200	\$32,000
3	100,000		.1920	\$19,200
4	100,000		.1152	\$11,520
5	100,000		.1152	\$11,520
6	100,000		.0576	\$5,760

15. Using MACRS, calculate the depreciation per year on a project with a depreciable base of \$100,000 if the expected life is 7 years.

Solution:

<b>Year</b>	<b>Base</b>	<b>x</b>	<b>Rate</b>	<b>Depreciation Expense</b>
1	100,000		.1429	\$14,290
2	100,000		.2449	\$24,490
3	100,000		.1749	\$17,490
4	100,000		.1249	\$12,490
5	100,000		.0893	\$8,930
6	100,000		.0892	\$8,920
7	100,000		.0893	\$8,930
8	100,000		.0446	\$4,460