

VISUAL 12.1 ▲ Warm-Up

Write the exact percent equivalents and decimal equivalents for these fractions to the nearest 100th:

- | | | |
|------------------|------------------|-------------------|
| 1. $\frac{1}{2}$ | 4. $\frac{1}{5}$ | 7. $\frac{1}{10}$ |
| 2. $\frac{1}{3}$ | 5. $\frac{1}{6}$ | 8. $\frac{1}{20}$ |
| 3. $\frac{1}{4}$ | 6. $\frac{1}{8}$ | 9. $\frac{1}{25}$ |

Find the indicated number

- 2% of 3500 =
- 5.8% of 1230 =
- 120 is _____% of 1200?
- 25 is _____% of 200?
- 30 is 50% of _____?
- 212 is 6.5% of _____?
- The price of a camera was just reduced by \$9. This reduction was 5% of the original price. Find the original price.
- A car bought for \$5800 decreased in value by \$1000 the first year. What was the percent of decrease in its value to the nearest 100th?

VISUAL 12.2 A Answer Key to Activity 12.1

Question #	#2		#3	#4		#5	#6	#7	#8	#10	#11	#12	
	Car #	Type	Price (Q1)	Sales tax	Fees	Final price	% diffnce	20% Down	Ins Cost	Savings Acct Bal	# mon pay	Amt finan	Mon Paym
1	89	Camaro	2750	192.50	275.00	3217.50	17	550	808	2642	48	2667.50	67.95
2	91	Firebird	5000	350.00	275.00	5625.00	13	1000	934	2066	48	4625.00	126.81
3	93	Mustang	4000	280.00	275.00	4555.00	14	800	1021	2179	48	3755.00	101.45
4	94	Taurus	4500	315.00	275.00	5090.00	13	900	753	2347	48	4190.00	114.13
5	92	T-bird	3000	210.00	275.00	3485.00	16	600	758	2642	48	2885.00	76.09
6	92	Metro	1450	101.50	275.00	1826.50	26	290	745	2965	48	1536.50	36.78
7	91	Accord	4250	297.50	275.00	4822.50	13	850	770	2380	48	3972.50	106.52
8	90	Camry	3700	259.00	275.00	4234.00	14	740	653	2607	48	3494.00	93.84

9. Answers will vary.
 13. 10,950 miles
 14,15,16. See chart above. (Visual 12.2 B)
 17. Monthly maintenance = \$41.67 which \approx \$42.00
 18. Monthly Parking = \$8.00
 19. Monthly Improvements = 12.50 (\$150/12)
 20. Monthly Cost of Regis, lic 25.00 (\$300/12)
 21-22. See Visual 12.2 C

VISUAL 12.2 B ▲

Question #	#13	#14	#15	#16	#17	#18	#19	#20	Total explicit					
Car #	Type	Ann miles	MPG	Avg \$ gas	Ann cost gas	Mon cost gas	Year cost insurance	Mon cost insurance	Monthly payment	Monthly mainten	Monthly parking	Monthly access	Monthly regis, lic, insp	
1	89 Camaro	10,950	23	\$1,429	\$680.33	\$57.00	\$808.00	\$67.33	\$67.95	\$42.00	\$8.00	\$12.50	\$25.00	\$279.78
2	91 Firebird	10,950	22	\$1,429	\$711.25	\$59.00	\$934.00	\$77.83	\$126.81	\$42.00	\$8.00	\$12.50	\$25.00	\$351.14
3	93 Mustang	10,950	26	\$1,429	\$601.83	\$50.00	\$1,021.00	\$85.08	\$101.45	\$42.00	\$8.00	\$12.50	\$25.00	\$324.03
4	94 Taurus	10,950	24	\$1,429	\$651.98	\$54.00	\$753.00	\$62.75	\$114.13	\$42.00	\$8.00	\$12.50	\$25.00	\$318.38
5	92 T-bird	10,950	20	\$1,429	\$782.38	\$65.00	\$758.00	\$63.17	\$76.09	\$42.00	\$8.00	\$12.50	\$25.00	\$291.76
6	92 Metro	10,950	38	\$1,429	\$411.78	\$34.00	\$745.00	\$62.08	\$36.78	\$42.00	\$8.00	\$12.50	\$25.00	\$220.36
7	91 Accord	10,950	26	\$1,429	\$601.83	\$50.00	\$770.00	\$64.17	\$106.52	\$42.00	\$8.00	\$12.50	\$25.00	\$308.19
8	90 Camry	10,950	30	\$1,429	\$521.59	\$43.00	\$653.00	\$54.42	\$93.84	\$42.00	\$8.00	\$12.50	\$25.00	\$278.76

Answers to Questions 23–27

23. Answers vary, but most people do not consider all the implicit and explicit costs of ownership.
24. \$480.
25. Studying, socializing, playing sports/exercising, reading, TV, etc.
26. $\$480 \times .12 = \57.60 $\$480 - 57.60 = \422.40
27. Answers vary.

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VISUAL 12.2 C ▲ Implicit Costs of Automobile Ownership: Answer Key

21.

Car #	Type	Savings original	Savings spent	Savings remaining	Interest lost per year	Interest lost per month
1	89 Camaro	4000	1358	2642	\$67.90	\$6.00
2	91 Firebird	4000	1934	2066	\$96.70	\$8.00
3	93 Mustang	4000	1821	2179	\$91.05	\$8.00
4	94 Taurus	4000	1653	2347	\$82.65	\$7.00
5	92 T-bird	4000	1358	2642	\$67.90	\$6.00
6	92 Metro	4000	1035	2965	\$51.75	\$4.00
7	91 Accord	4000	1620	2380	\$81.00	\$7.00
8	90 Camry	4000	1393	2607	\$69.65	\$6.00

22. Total Economic (Opportunity) Costs

Car #	Type	Explicit	Implicit	Economic Cost
1	89 Camaro	279.78	\$6.00	\$285.78
2	91 Firebird	351.14	\$8.00	\$359.14
3	93 Mustang	324.03	\$8.00	\$332.03
4	94 Taurus	318.38	\$7.00	\$325.38
5	92 T-bird	291.76	\$6.00	\$297.76
6	92 Metro	220.36	\$4.00	\$224.36
7	91 Accord	308.19	\$7.00	\$315.19
8	90 Camry	278.76	\$6.00	\$284.76

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VISUAL 12.3A ▲ Answers to Activity 12.2

1,2: Variable costs (gas, maintenance, parking, and accessories) are shown with totals.

Variable Cost Items <i>are italicized</i>	Car #1	Car #2	Car #3	Car #4	Car #5	Car #6	Car #7	Car #8
<i>Gas</i>	\$57.00	\$59.00	\$50.00	\$54.00	\$65.00	\$34.00	\$50.00	\$43.00
<i>Auto Insurance</i>								
<i>Car Loan Paymt</i>								
<i>Maintenance</i>	\$42.00	\$42.00	\$42.00	\$42.00	\$42.00	\$42.00	\$42.00	\$42.00
<i>Parking Fees</i>	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00
<i>Accessories</i>	\$12.50	\$12.50	\$12.50	\$12.50	\$12.50	\$12.50	\$12.50	\$12.50
<i>Regis, Lic, Inspec</i>								
<i>Implicit Costs</i>								
Total Variable Costs	\$119.50	\$121.50	\$112.50	\$116.50	\$127.50	\$96.50	\$112.50	\$105.50

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VISUAL 12.3 B ▲ Answers to Activity 12.2

3. Monthly fixed costs (insurance, loan payment, registration, license, inspection and implicit costs) are shown with totals.

Fixed Cost Items are in bold	Car #1	Car #2	Car #3	Car #4	Car #5	Car #6	Car #7	Car #8
Gas								
Auto Insurance	\$67.33	\$77.83	\$85.08	\$62.75	\$63.17	\$62.08	\$64.17	\$54.42
Car Loan Payment	67.95	126.81	101.45	114.13	76.09	36.78	106.52	93.84
Maintenance								
Parking Fees								
Accessories								
Regis, Lic, Inspect	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Implicit Costs	6.00	8.00	8.00	7.00	6.00	4.00	7.00	6.00
Total Fixed Costs	166.28	237.64	219.53	208.88	170.26	127.86	202.69	179.26

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VISUAL 12.3 C ▲ Answers to Activity 12.2

4. and 5. Percentage costs of total for variable and fixed expenses.

	#1	#2	#3	#4	#5	#6	#7	#8
Total Variable Costs	\$119.50	\$121.50	\$112.50	\$116.50	\$127.50	\$96.50	\$112.50	\$105.50
Total Economic Cost	285.78	359.14	332.03	325.38	297.76	224.36	315.19	284.76
% of Total cost	41.8%	33.8%	33.9%	35.8%	42.8%	43.0%	35.7%	37.0%
Total Fixed Costs	166.28	237.64	219.53	208.88	170.26	127.86	202.69	179.26
Total Economic Cost	285.78	359.14	332.03	325.38	297.76	224.36	315.19	284.76
% of Total Costs	58.2%	66.2%	66.1%	64.2%	57.2%	57.0%	64.3%	63.0%

6. Fixed costs constitute a higher percentage (in some cases almost 2/3) of the total cost, and cannot be reduced. Thus, the smaller percentage (variable costs) is the only one that can be reduced and there is much less of that to reduce. It therefore pays to get the lowest fixed costs possible at the time of purchase.