

Applications

He that goes a borrowing goes a sorrowing.

Benjamin Franklin, American Statesman

TEACH

Algebraic Representations

Students having difficulty with algebraic representations should be reminded to mimic the previous numeric examples.

Options to Buy

Describe the difference between rent-to-own and layaway plans. In rent-to-own plans, the consumer has the use of the product before paying in full. In layaway, they do not get the product until payment is made in full.

Finance Charges

As each finance charge problem is completed, ask students if they feel that the interest is a worthwhile fee for having the use of the product sooner than if money were saved before making the purchase.

ANSWERS

1. Borrowing money is a tremendous responsibility; it ties up future income, and sometimes borrowers regret borrowing. Borrowers also pay a fee (interest) for borrowing.

1. Interpret the quote in the context of what you learned. *See margin.*
- Solve each problem. Round monetary amounts to the nearest cent.**
2. Monique buys a \$4,700 air conditioning system using an installment plan that requires 15% down. How much is the down payment? **\$705**
3. Craig wants to purchase a boat that costs \$1,420. He signs an installment agreement requiring a 20% down payment. He currently has \$250 saved. Does he have enough for the down payment? **no**
4. Jean bought a \$1,980 snow thrower on the installment plan. The installment agreement included a 10% down payment and 18 monthly payments of \$116 each.
 - a. How much is the down payment? **\$198**
 - b. What is the total amount of the monthly payments? **\$2,088**
 - c. How much did Jean pay for the snow thrower on the installment plan? **\$2,286**
 - d. What is the finance charge? **\$306**
5. Linda bought a washer and dryer from Millpage Laundry Supplies for y dollars. She signed an installment agreement requiring a 15% down payment and monthly payments of x dollars for one year.
 - a. Express her down payment algebraically. **$0.15y$**
 - b. How many monthly payments must Linda make? **12**
 - c. Express the total amount of the monthly payments algebraically. **$12x$**
 - d. Express the total amount Linda pays for the washer and dryer on the installment plan algebraically. **$12x + 0.15y$**
 - e. Express the finance charge algebraically. **$12x + 0.15y - y$, or $12x - 0.85y$**
6. Zeke bought a \$2,300 bobsled on the installment plan. He made a \$450 down payment, and he has to make monthly payments of \$93.50 for the next two years. How much interest will he pay? **\$394**
7. Gary is buying a \$1,250 computer on the installment plan. He makes a down payment of \$150. He has to make monthly payments of \$48.25 for $2\frac{1}{2}$ years. What is the finance charge? **\$347.50**
8. Mazzeo's Appliance Store requires a down payment of $\frac{1}{3}$ on all installment purchases. Norton's Depot requires a 30% down payment on installment purchases. Which store's down payment rate is lower?
Norton's Depot
9. Ari purchased a microwave oven on the installment plan for m dollars. He made a 20% down payment and agreed to pay x dollars per month for the two years. Express the finance charge algebraically.
 $0.2m + 24x - m$, or $24x - 0.8m$

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Chapter 4 Consumer Credit

cial no-interest plan. He made a \$100 down payment and agreed to pay the entire purchase off in $1\frac{1}{2}$ years. The minimum monthly payment is \$10. If he makes the minimum monthly payment up until the last payment, what will be the amount of his last payment? **\$1,400**

- g. \$195
- h. \$201
- i. \$98
- j. 12
- k. 24
- l. 18
- m. 6

11. Max created a spreadsheet for installment purchase calculations.

	A	B	C	D	E	F	G	H
	Purchase Price	Down Payment Percentage as a Decimal	Down Payment	Monthly Payment	Time in Years	Time in Months	Total of Monthly Payments	Finance Charge
1								
2	\$1,200	0.20	f.	\$ 97.01	1	j.	n.	s.
3	\$1,750	0.10	g.	\$ 71.12	2	k.	p.	t.
4	\$1,340	0.15	h.	\$ 77.23	1.5	l.	q.	u.
5	\$ 980	0.10	i.	\$165.51	0.5	m.	r.	v.

- a. Write a spreadsheet formula to compute the down payment in cell C2. **=A2*B2**
- b. Write a spreadsheet formula to compute the time in months in cell F2. **=12*E2**
- c. Write a spreadsheet formula to compute the total of monthly payments in cell G2. **=D2*F2**
- d. Write the spreadsheet formula to compute the finance charge in cell H2. **=C2+G2-A2**
- e. Use your answers to a–d to fill in the missing entries f–v. **See margin.**

- n. \$1,164.12
- p. \$1,706.88
- q. \$1,390.14
- r. \$993.06
- s. \$204.12
- t. \$151.88
- u. \$251.14
- v. \$111.06

12. A *layaway plan* is similar to an installment plan, but the customer does not receive the merchandise until it is paid for. It is held in the store for a fee. If you purchased a \$1,700 set of golf clubs on a nine-month layaway plan and had to pay a monthly payment of \$201, what is the sum of the monthly payments? What was the fee charged for the layaway plan? **\$1,809; \$109**

13c. With the layaway plan, you do not receive the merchandise until payment is made in full. With the deferred payment plan, you receive the merchandise immediately.

13. A *deferred payment plan* is also similar to an installment plan, except there are very low monthly payments until the end of the agreement. At that point, the entire purchase must be paid in full. If it is not paid, there will be high finance charges. Often, there is no interest—stores use no-interest deferred payment plans to attract customers. Many times there is also no down payment.

- a. Chris purchases a living room furniture set for \$4,345 from Halloran Gallery. She has a one-year, no interest, no money down, deferred payment plan. She does have to make a \$15 monthly payment for the first 11 months. What is the sum of these monthly payments? **\$165**
- b. How much must Chris pay in the last month of this plan? **\$4,180**
- c. What is the difference between the layaway plan in Exercise 12 and the deferred payment plan? **See margin.**

14. Audrey purchases a riding lawnmower using the 2-year no-interest deferred payment plan at Lawn Depot for x dollars. There was a down payment of d dollars and a monthly payment of m dollars. Express the amount of the last payment algebraically. **$x - d - 12$**