Multiple-Choice Questions

1. Which of the following is best defined as a relatively permanent change in behavior due to experience?
   a. Acquisition  
   b. Stimulus  
   c. Learning  
   d. Habituation  
   e. Response

2. Lynn is teaching learning. Every time she claps her hands, Charlie turns off the light. When Randy claps in approval of Lynn’s presentation, Charlie does not turn the light off. What concept has Charlie demonstrated?
   a. Habitation  
   b. Discrimination  
   c. Spontaneous recovery  
   d. Extinction  
   e. Habituation

3. Classical conditioning is the type of learning in which which of the following is true?
   a. person links two or more stimuli and
   b. forgets about them.
   c. lays them out in sequence.
   d. shuts down.
   e. anticipates events.
   f. receives a reward.

4. In classical conditioning, the unconditioned stimulus
   a. naturally triggers a response.  
   b. is a naturally occurring response.  
   c. is initially irrelevant, and then comes to trigger a response.  
   d. objectively studies psychology.  
   e. is Pavlovian.

5. Students are accustomed to a bell ringing to indicate the end of a class period. The principle decides to substitute popular music for the bell to indicate the end of each class period. Students quickly respond to the music in the same way they did to the bell. What principle does this illustrate?
   a. Acquisition  
   b. Habituation  
   c. Generalization  
   d. Functional fixedness  
   e. Stimulus

6. The work of Ivan Pavlov and John Watson fits best into which of psychology’s perspectives?
   a. Humanism  
   b. Gestalt psychology  
   c. Trait theory  
   d. Behaviorism  
   e. Neuropsychology

Practice FRQs

1. Carter’s goldfish has been classically conditioned to swim to the top of the fish tank every time the light is turned on. This happened because Carter always turns on the light in the room just before feeding the fish. Identify what each of the following would be in this example, making sure you explain why you know your identification is correct.

   a. Classically conditioned response (CR)
   b. Conditioned stimulus (CS)
   c. Unconditioned stimulus (US)

   **Answer**
   1 point: The goldfish swimming to the top of the tank when the light is turned on is the CR because the fish has learned to behave in this way.

   1 point: The light is the CS because the goldfish has learned to respond to this stimulus. The light was initially an NS.

   1 point: The food is the US because this stimulus will naturally cause the fish to swim to the top of the tank.

2. A researcher paired the sound of a whistle with an air puff to the eye to classically condition Ashley to blink when the whistle alone was sounded. Explain how the researcher could demonstrate the following:

   a. Generalization  
   b. Extinction  
   c. Spontaneous recovery

   (3 points)

Module 27

Operant Conditioning

Module Learning Objectives

27-1 Describe operant conditioning, and explain how operant behavior is reinforced and shaped.

27-2 Discuss the differences between positive and negative reinforcement, and identify the basic types of reinforcers.

27-3 Explain how the different reinforcement schedules affect behavior.

27-4 Discuss how punishment and negative reinforcement differ, and explain how punishment affects behavior.

27-5 Describe the controversy over Skinner’s views of human behavior.

Operant Conditioning

27-1 What is operant conditioning, and how is operant behavior reinforced and shaped?

It’s one thing to classically condition a dog to salivate at the sound of a tone, or a child to first moving cars. To teach an elephant to walk on its hind legs or a child to say please, we turn to operant conditioning.

Classical conditioning and operant conditioning are both forms of associative learning, yet their difference is straightforward:

- Classical conditioning forms associations between stimuli (a CS and a US) that elicit responses. It also involves respondent behavior—actions that are automatic responses to a stimulus (such as salivating in response to a flavor or in response to a taste).
- In operant conditioning, organisms associate their own actions with consequences. Actions followed by reinforcers increase; those followed by punishers often decrease. Behavior that operates on the environment to produce rewarding or punishing stimuli is called operant behavior.

Skinner’s Experiments

B. F. Skinner (1904–1990) was a college English major and an aspiring writer who, seeking a new direction, entered psychology graduate school. He went on to become modern behaviorism’s most influential and controversial figure. Skinner’s work elaborated on what psychologist Edward L. Thorndike (1874–1949) called the law of effect: Rewarding behaviors followed by favorable consequences become more likely, and that behaviors followed by unfavorable consequences become less likely.
behavior is likely to recur. (FIGURE 27.1). Using Thorndike's law of effect as a starting point, Skinner developed a behavioral technology that revealed principles of behavior control. These principles also enabled him to teach pigeons such unbiologic-like behaviors as walking in a figure 8, playing Ping-Pong, and keeping a missile on course by pecking at a screen target.

For his pioneering studies, Skinner designed an operant chamber, popularly known as a Skinner box (FIGURE 27.2). The box has a bar (a lever) that an animal press—or a key (a disc) the animal pecks—to release a reward of food or water. It also has a device that records these responses. This design creates a stage on which rats and other animals act out Skinner's concept of reinforcement: any event that strengthens (increases the frequency of) a preceding response. What is reinforcing depends on the animal and the conditions. For people, it may be praise, attention, or a paycheck. For hungry and thirsty rats, food and water work well. Skinner's experiments have done far more than teach us how to pull habits out of a rat. They have explored the precise conditions that foster efficient and enduring learning.

Shaping Behavior

Imagine that you wanted to condition a hungry rat to press a bar. Like Skinner, you could tease out this action with shaping, gradually guiding the rat's actions toward the desired behavior. First, you would watch how the animal naturally behaves, so that you could build on its existing behaviors. You might give the rat a bit of food each time it approaches the bar. Once the rat is approaching regularly, you would give the food only when it moves closer to the bar, then closer still. Finally, you would require it to touch the bar to get food. With this method of successive approximations, you reward responses that are ever closer to the final desired behavior, and you ignore all other responses. By making rewards contingent on desired behaviors, researchers and animal trainers gradually shape complex behaviors.

Shaping can also help us understand what nonverbal organisms perceive. Can a dog distinguish red and green? Can a baby hear the difference between lower- and higher-pitched tones? If we can shape them to respond to one stimulus and not to another, then we know they can perceive the difference. Such experiments have even shown that some animals can form concepts. When experimenters reinforced pigeons for pecking after seeing a human face, but not after seeing other images, the pigeon's behavior showed that it could recognize human faces (Hermstein & Loveland, 1964). In this experiment, the human face was a discriminative stimulus. Like a green traffic light, discriminative stimuli signal that a response will be reinforced. After being trained to discriminate between classes of events or objects—flowers, cars, chairs—pigeons can usually identify the category in which a new pictured object belongs (Bhatt et al., 1986; Wasserman, 1993). They have even been trained to discriminate between the music of Bach and Stravinsky (Porter & Neuringer, 1984).

In everyday life, we continually reinforce and shape others' behavior, said Skinner, though we may not mean to do so. Isaac's whining, for example, annoys his dad, but look how he typically responds:

**Isaac:** Could you take me to the mall?
**Father:** (ignores Isaac and stays focused on his phone)
**Isaac:** Dad, I need to go to the mall.
**Father:** (distracted) Uh, yeah, just a minute.
**Isaac:** DAAAAA! The mall!!!
**Father:** Show some manners! Okay, where are my keys... Isaac's whining is reinforced, because he gets something desirable—his dad's attention.

Discriminative stimulus

In operant conditioning, a stimulus that elicits a response after association with reinforcement (in contrast to a neutral stimulus not associated with reinforcement).

Positive reinforcement

Increasing behaviors by presenting positive reinforcers. A positive reinforcer is any stimulus that, when presented after a response, strengthens the response.

Shaping a dog to play the piano. Using a method of successive approximations, with a food reward for each small step—hopping up on the piano bench, putting her paws on the keys, actually making sounds—the dog was taught to "play the piano, and now does so frequently!"

Types of Reinforcers

How do positive and negative reinforcement differ, and what are the basic types of reinforcers?

Up to now, we've mainly been discussing positive reinforcement, which strengthens a response by presenting a typically pleasant stimulus after a response. But, as we saw in the whining Isaac story, there are two basic kinds of reinforcement (TABLE 27.1 on the next page).
Table 27.1 Ways to Increase Behavior

<table>
<thead>
<tr>
<th>Operant Conditioning Term</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive reinforcement</td>
<td>Add a desirable stimulus</td>
<td>Pet a dog that comes when you call it; pay the person who paints your house</td>
</tr>
<tr>
<td>Negative reinforcement</td>
<td>Remove an aversive stimulus</td>
<td>Take paintbrushes to end pain; fasten seat belt to end loud sleeping</td>
</tr>
</tbody>
</table>

Negative reinforcement strengthens a response by reducing or removing something negative. Isaac's whining was positively reinforced, because Isaac got something desirable—his father's attention. His dad's response to the whining (talking Isaac to the mall) was negatively reinforced, because it ended an aversive event—Isaac's whining. Similarly, taking aspirin may relieve your headache, and pushing the snooze button will silence your annoying alarm. These welcome results provide positive reinforcement and decrease the odds that you will repeat these behaviors. For drug addicts, the negative reinforcement of ending withdrawal pains can be a compelling reason to resume using (Baker et al., 2004). Note that negative reinforcement is not punishment. (Some friendly advice: Repeat the last five words in your mind.) Rather, negative reinforcement removes a punishing (aversive) event. Think of negative reinforcement as something that provides relief—from that whining teenager, bad headache, or annoying alarm.

Sometimes negative and positive reinforcement coincide. Imagine a worried student who, after goofing off and getting a bad test grade, studies harder for the next test. This increased effort may be negatively reinforced by reduced anxiety, and positively reinforced by a better grade. Whether it works by reducing something aversive, or by giving something desirable, reinforcement is any consequence that strengthens behavior.

**HI AND LOIS**

"I'll have to wake up crying in the middle of the night more often"

PRIMARY AND CONDITIONED REINFORCERS

Getting food when hungry or having a painful headache go away is intrinsically satisfying. These primary reinforcers are unlearned. Conditioned reinforcers, also called secondary reinforcers, get their power through learned association with primary reinforcers. If a rat in a Skinner box learns that a light reliably signals a food delivery, the rat will work to turn on the light. The light has become a conditioned reinforcer. Our lives are filled with conditioned reinforcers—money, good grades, a pleasant tone of voice—each of which has been linked with more basic rewards.

IMMEDIATE AND DELAYED REINFORCERS

Let's return to the imaginary shaping experiment in which you were conditioning a rat to press a bar. Before performing this "wanted" behavior, the hungry rat will engage in a sequence of "unwanted" behaviors—scratching, sniffing, and moving around. If you present food immediately after any one of those behaviors, the rat will likely repeat that rewarded behavior. But what if the rat presses the bar while you are distracted, and you delay giving the reinforcer? If the delay lasts longer than about 30 seconds, the rat will not learn to press the bar. You will have reinforced other incidental behaviors—more sniffing and moving—that intervened after the bar press.

Unlike rats, humans do respond to delayed reinforcers: the paycheck at the end of the week, the good grade at the end of the term, the trophy at the end of the season. Indeed, to function effectively we must learn to delay gratification. In laboratory testing, some 4-year-olds show this ability. In choosing a candy, they prefer having a big one tomorrow to munching on a small one right now. Learning to control our impulses in order to achieve more valued rewards is a big step toward maturity (Logue, 1989). No wonder children who make such choices have tended to become socially competent and high-achieving adults (Mischel et al., 1989).

To our detriment, small but immediate consequences (the enjoyment of late-night videos or testing, for example) are sometimes more alluring than big but delayed consequences (feeling alert tomorrow). For many teenagers, the immediate gratification of risky unprotected sex in passionate moments prevails over the delayed gratifications of safe sex or saved sex. And for many people, the immediate rewards of today's gas-guzzling vehicles, air travel, and air conditioning prevail over the bigger future consequences of global climate change, rising seas, and extreme weather.

**Reinforcement Schedules**

How do different reinforcement schedules affect behavior?

In most of our examples, the desired response has been reinforced every time it occurs. But reinforcement schedules vary. With continuous reinforcement, learning occurs rapidly, which makes this the best choice for mastering a behavior. But extinction also occurs rapidly. When reinforcement stops—when we stop delivering food after the rat presses the bar—the behavior soon stops. If a normally dependable candy machine fails to deliver a chocolate bar twice in a row, we stop putting money into it (although a week later we may exhibit spontaneous recovery by trying again).

Real life rarely provides continuous reinforcement. Salespeople do not make a sale with every pitch. But they persist because their efforts are occasionally rewarded. This persistence is typical with partial (intermittent) reinforcement schedules, in which responses are sometimes reinforced, sometimes not. Learning is slower to appear, but resistance to extinction is greater than with continuous reinforcement. Imagine a pigeon that has learned to peek a key to obtain food. If you gradually phase out the food delivery until it occurs only rarely, in no predictable pattern, the pigeon may peck 350,000 times without a reward (Skinner, 1953). Gambling machines and lottery tickets reward gamblers in much the same way—occasionally and unpredictably. And lie pigeons, slot players keep trying, time and time again. With intermittent reinforcement, hope springs eternal.

Lesson for child caregivers: Partial reinforcement also works with children. Occasionally giving in to children's tantrums for the sake of peace and quiet intermittently reinforces the tantrums. This is the very best procedure for making a behavior persist. Skinner (1961) and his collaborators compared four schedules of partial reinforcement. Some are rigidly fixed, some unpredictably variable.

**Fixed-ratio schedules** reinforce behavior after a set number of responses. Coffee shops reward us with a free drink after every 10 purchased. In the laboratory, rats may be reinforced on a fixed ratio of, say, one food pellet for every 30 responses. Once conditioned, animals will pause only briefly after a reinforcement before returning to a high rate of responding (Figure 27.3 on the next page).

**The charm of fasting is that it is the pursuit of what is elusive but attainable, a perpetual series of occasions for hope." -Sigmund Freud, Author of "Beyond the Pleasure Principle" (1895-1920)
Intermittent reinforcement schedules
Skinner's laboratory pigeons produced these response patterns to each of four reinforcement schedules. (Reinforcers are indicated by diagonal marks.) For people, as for pigeons, reinforcement linked to number of responses (a ratio schedule) produces a higher response rate than reinforcement linked to amount of time elapsed (an interval schedule). But the predictability of the reward also matters. An unpredictable (variable) schedule produces more consistent responding than does a predictable (fixed) schedule. Adapted from "Teaching Machines" by R. F. Skinner. Copyright © 1951, Scientific American, Inc. All Rights Reserved.

**Variable-ratio schedules** provide reinforcers after a seemingly unpredictable number of responses. This is what slot-machine players and fly-casting anglers experience—unpredictable reinforcement—and what makes gambling and fishing so hard to extinguish even when both are getting nothing for something. Because reinforcers increase as the number of responses increases, variable-ratio schedules produce high rates of responding.

**Fixed-interval schedules** reinforce the first response after a fixed time period. Animals on this type of schedule tend to respond more frequently as the anticipated time for reward draws near. People check more frequently for the mail as the delivery time approaches. A hungry child jiggles the Jell-O more often to see if it has set. Pigeons peck keys more rapidly as the time for reinforcement draws nearer. This produces a choppy stop-start pattern rather than a steady rate of response (see Figure 27.3).

**Variable-interval schedules** reinforce the first response after varying time intervals. Like the leger-de-biblios that finally realize persistence in rechecking e-mail or Facebook, variable-interval schedules tend to produce slow, steady responding. This makes sense, because there is no knowing when the waiting will be over (TABLE 27.2).

In general, response rates are higher when reinforcement is linked to the number of responses (a ratio schedule) rather than to time (an interval schedule). But responding is more consistent when reinforcement is unpredictable (a variable schedule) than when it is predictable (a fixed schedule). Animal behaviors differ, yet Skinner (1956) contended that the reinforcement principles of operant conditioning are universal. It matters little, he said, what response, what reinforcer, or what species you use. The effect of a given reinforcement schedule is pretty much the same: "Pigeons, rat, monkey, which is which? It doesn't matter... Behavior shows astonishingly similar properties."

**Punishment**

**TABLE 27.3 Ways to Decrease Behavior**

<table>
<thead>
<tr>
<th>Type of Punisher</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive punishment</td>
<td>Administer an aversive stimulus</td>
<td>Spray water or a barbed wire; give a traffic ticket for speeding</td>
</tr>
<tr>
<td>Negative punishment</td>
<td>Withdraw a rewarding stimulus</td>
<td>Take away a teen's driving privileges; revoke a library card for nonpayment of fines</td>
</tr>
</tbody>
</table>

Criminal behavior, much of it impulsive, is also influenced more by swift and sure punishments than by the threat of severe sentences (Dusky & Allee, 2011). Thus, when Arizona introduced an exceptionally harsh sentence for first-time drunk drivers, the drunk-driving rate changed very little. But when Kansas City police started patrolling a high crime area to increase the swiftness and swiftness of punishment, that city's crime rate dropped dramatically. How can we interpret the punishment studies in relation to contemporary practices? Many psychologists and supporters of nonviolent parenting note four major drawbacks of physical punishment (Gershoff, 2002; Marshall, 2002).

1. Punished behavior is suppressed, not forgotten. This temporary state may (negatively) reinforce parents' punishing behavior. The child swears, the parent swears, the parent hears no more swearing and feels the punishment successfully stopped the behavior. No wonder spanking is a bit with so many U.S. parents of 3- and 4-year-olds—more than 9 in 10 of whom acknowledged spanking their children (Kazdin & Benjet, 2003).

2. Punishment teaches discrimination among situations. In operant conditioning, discrimination occurs when an organism learns that certain responses, but not others, will be reinforced. Did the punishment effectively end the child's swearing? Did the child simply learn that it's not okay to swear around the house, but okay elsewhere?

3. Punishment can teach fear. In operant conditioning, generalization occurs when an organism's response to similar stimuli is also reinforced. A punished child may associate fear not only with the undesirable behavior but also with the person who delivered the punishment or the place it occurred. Thus, children may learn to fear a punishing teacher and try to avoid school, or may become more anxious (Gershoff et al., 2010). For such reasons, most European countries and most U.S. states now ban punishment as an event that tends to decrease the behavior that follows.
hitting children in schools and child-care institutions (www.stophitting.com). Thoroughly these countries, including those in Scandinavia, further outlaw hitting by parents, providing children the same legal protection given to spouses.

4. Physical punishment may increase aggression by modeling aggression as a way to cope with problems. Studies find that spanked children are at increased risk for aggression (and depression and low self-esteem). We know, for example, that many aggressive delinquents and abusive parents come from abusive families (Straus & Gelles, 1989; Straus et al., 1997).

Some researchers note a problem. Well, yes, they say, physically punished children may be more aggressive, for the same reason that people who have undergone psychotherapy are more likely to suffer depression—because they had preexisting problems that triggered the treatments (Larzelere, 2000, 2004). Which is the chicken and which is the egg? Correlations don’t hand us an answer.

If one adjusts for preexisting antisocial behavior, then an occasional single span or two to misbehaving 2- to 6-year-olds looks more effective (Baumrind et al., 2002; Larzelere & Kuhn, 2005). That is especially so if two other conditions are met:

1. The span is used only as a backup when milder disciplinary tactics, such as a time-out (removing them from reinforcing surroundings), fail.
2. The span is combined with a generous dose of reasoning and reinforcing.

Other researchers remain unconvinced. After controlling for prior misbehavior, they report that more frequent spankings of young children predict future aggressiveness (Grogan-Kaylor, 2004; Taylor et al., 2010).

Parents of delinquent youths are often unaware of how to achieve desirable behaviors without screaming at or hitting their children (Patterson et al., 1982). Training programs can help transform dire threats (“’Apologize right now or I’m taking that cell phone away!’”) into positive incentives (“You’re welcome to your phone back when you apologize.”) and think about it. Aren’t many threats of punishment just as forcible, and perhaps more effective, when repphrased positively? Thus, “If you don’t get your homework done, I’m not giving you money for a movie!” would be better expressed as . . .

In classrooms, too, teachers can give feedback on papers by saying, “No, but try this . . .” and “Yes, that’s it!” Such responses reduce unwanted behavior while reinforcing more desirable alternatives. Remember: Punishment tells you what not to do; reinforcement tells you what to do.

What punishment often teaches, said Skinner, is how to avoid it. Most psychologists now favor an emphasis on reinforcement.

**Skinner’s Legacy**

**27.5 Why did Skinner’s ideas provoke controversy?**

B. F. Skinner stirred a hornet’s nest with his outspoken beliefs. He repeatedly insisted that external influences (not internal thoughts and feelings) shape behavior. And he urged people to use operant principles to influence others’ behavior at school, work, and home.

Knowing that behavior is shaped by its results, he said we should use rewards to evoke more desirable behavior.

Skinner’s critics objected, saying that he denaturalized people by neglecting their personal freedom and by seeking to control their actions. Skinner’s reply: External consequences already haphazardly control people’s behavior. Why not administer those consequences toward human betterment? Wouldn’t reinforcing be more humane than the punishments used in homes, schools, and prisons? And if it is humbling to think that our history has shaped us, doesn’t this very idea also give us hope that we can shape our future?

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**Module 27 Review**

**27.1 What is operant conditioning, and how is operant behavior reinforced and shaped?**

- In operant conditioning, behaviors followed by reinforcers increase; those followed by punishers often decrease.

- Expecting on Edward Thorndike’s law of effect, B. F. Skinner and others found that the behavior of rats or pigeons placed in an operant chamber (Skinner box) can be shaped by using reinforcers to guide closer and closer approximations of the desired behavior.

**27.2 How do positive and negative reinforcement differ, and what are the basic types of reinforcers?**

- **Reinforcement** is any consequence that strengthens behavior. Positive reinforcement adds a desirable stimulus to increase the frequency of a behavior. Negative reinforcement removes an aversive stimulus to increase the frequency of a behavior.

- **Primary reinforcers** (such as food when hungry or having nausea absent during an illness) are innately satisfying—no learning is required.

- **Secondary reinforcers** (such as cash) are satisfying because we have learned to associate them with more basic rewards (such as the food or medicine we buy with them).

- Immediate reinforcers (such as a purchased treat) offer immediate payback; delayed reinforcers (such as a weekly paycheck) require the ability to delay gratification.
27-3 How do different reinforcement schedules affect behavior?

- A reinforcement schedule defines how often a response will be reinforced.
- In continuous reinforcement (reinforcing desired responses every time they occur), learning is rapid, but so is extinction if rewards cease. In partial (intermittent) reinforcement (reinforcing responses only sometimes), initial learning is slower, but the behavior is much more resistant to extinction.
- Fixed-ratio schedules reinforce behaviors after a set number of responses; variable-ratio schedules, after an unpredictable number.
- Fixed-interval schedules reinforce behaviors after set time periods; variable-interval schedules, after unpredictable time periods.

27-4 How does punishment differ from negative reinforcement, and how does punishment affect behavior?

- Punishment administers an undesirable consequence (such as spanking) or withdraws something desirable (such as taking away a favorite toy) in an attempt to decrease the frequency of a behavior (a child’s disobedience).
- Negative reinforcement (taking an aspirin) removes an aversive stimulus (a headache). This desired consequence (freedom from pain) increases the likelihood that the behavior (taking aspirin to end pain) will be repeated.
- Punishment can have undesirable side effects, such as suppressing rather than changing unwanted behaviors; teaching aggression; creating fear; encouraging discrimination (so that the undesirable behavior appears when the punisher is not present); and fostering depression and low self-esteem.

27-5 Why did Skinner’s ideas provoke controversy?

- Critics of Skinner’s principles believed the approach dehumanized people by neglecting their personal freedom and seeking to control their actions. Skinner replied that people’s actions are already controlled by external consequences, and that reinforcement is more humane than punishment as a means for controlling behavior.

Multiple-Choice Questions

1. What do we call the kind of learning in which behavior is strengthened if followed by a reinforcer?
   a. Operant conditioning
   b. Respondent behavior
   c. Classical conditioning
   d. Shaping
   e. Punishment

2. Which of the following best describes a discriminative stimulus?
   a. Something that elicits a response after association with a reinforcer
   b. An innately reinforcing stimulus
   c. Something that when removed increases the likelihood of the behavior
   d. An event that decreases the behavior it follows
   e. An amplified stimulus feeding back information to responses

3. Thorndike’s principle that behaviors followed by favorable consequences become more likely is known as what?
   a. Law of effect
   b. Operant conditioning
   c. Shaping
   d. Respondent behavior
e. Discrimination

4. All of the following are examples of primary reinforcers except a
   a. rat’s food reward in a Skinner box
   b. cold drink on a hot day
   c. high score on an exam for which a student studied diligently
   d. hug from a loved one
   e. large meal following an extended time without food

Practice FRQs

1. Mom is frustrated because 3-year-old Maya has started to spit frequently. She has decided to temporarily put away one of Maya’s toys every time she spits. Mom is going to continue this until Maya has stopped spitting.
   - Explain whether Mom’s plan uses reinforcement or punishment.
   - Explain whether Mom’s plan is a positive or negative form of reinforcement or punishment.

Answer
1 point: The plan uses punishment, because it is designed to reduce the frequency of spitting.
1 point: This is negative punishment because toys are being taken away from Maya.

2. A business owner is considering different compensation plans for her sales force. Identify what schedule of reinforcement is reflected in each of the following plans, making sure you explain why each answer is correct:
   - The owner will pay a $1,500 bonus each time a hundred units are sold.
   - The owner will have a lottery each month. Each salesperson will get one lottery ticket for every one hundred units sold. The salesperson with the winning ticket will get $5,000.
   - The owner will pay each salesperson a monthly salary that does not depend on units sold.

(3 points)