Learning Evaluation 3 Feedback

Congratulations! On Learning Evaluation 3 you met or exceeded the minimum grade target of 75%. That shows you’re making good progress on your work in The Diamond Course.

This feedback will help you identify any answers you may have missed, and find them in Lessons 9 through 14. It will also provide additional information.

1. The correct answer is C. The youngest diamonds are almost 1 billion years old. See Lesson 9 “Amazing Origins” [p. 3]. Diamonds are the oldest objects most customers will ever come in contact with. To give this fact emotional meaning, you might say that owning or giving a diamond is truly like owning or giving a small piece of eternity.

2. The correct answer is D. The pure carbon composition of a diamond can be more than 99.99%. See Lesson 9 “Crystals of Carbon” [p. 5]. Gem quality diamonds are typically about 99.95% pure carbon, but some are amazingly close to 100% pure. For example, Type IIb diamonds might contain 3 or 4 boron atoms for every 1 million carbon atoms, and 1 nitrogen atom for every 10 million carbon atoms.

3. The correct answer is B. The mineral with the same chemical composition as diamond, but a different crystal structure, is graphite. See Lesson 9 “Diamond Properties” [p. 8]. In diamond the carbon atoms are bonded uniformly in every direction. This produces great hardness and toughness. In graphite the carbon atoms are strongly bonded in sheets, but the bonds between sheets are very weak. As a result, the sheets of carbon atoms break apart easily. This is what makes graphite soft and “crumbly.”

4. The correct answer is A. One gem quality diamond crystal in a thousand grew large enough to yield a high quality finished diamond weighing 1 carat or more. See Lesson 9 “Another Perspective” [p. 11]. Gem quality diamonds are rare to begin with, and large high quality diamonds are exceptionally rare. This directly affects value, and it has symbolic meaning for many customers.

5. The correct answer is B. Most diamonds today come from volcanic formations known as pipes. See Lesson 10 “Primary Deposits” [p. 6]. Compared to more familiar types of volcanoes, diamond pipes are quite small. For example, Mauna Loa and Mount Saint Helens are more than 150 times the size of the largest diamond pipe. However, diamond pipes originate much deeper within the Earth.

6. The correct answer is A. The world’s first commercial source of diamonds was India. See Lesson 10 “Past Sources” [p. 9]. Historically, India’s diamonds came from alluvial deposits, but in recent years there has been an intense search to find the primary sources. Someday India might once again be an important diamond producer.

7. The correct answer is C. The top three diamond producers by value currently are Botswana, Russia, and South Africa. See Lesson 10 "Present Sources” [p. 10]. Together these three countries produce about 45% of the world’s diamonds by weight, and 56% by value.
8. The correct answer is D. The starting point for the global effort to prevent trade in conflict diamonds is the Kimberley Process. See Lesson 10 “Conflict Diamonds” [p. 17]. You might say the Kimberley Process is a “top-down” control mechanism because it’s enforced by the governments of countries that produce, trade in, or consume diamonds. On the other hand, the system of industry warranties is a “bottom-up” process that starts with wholesalers, cutters, and retailers demanding a reliable supply of conflict-free diamonds for their customers.

9. The correct answer is C. Canada’s Ekati Mine begin full-scale production in 1998. See Lesson 11 “Development” [p. 7]. In its first year of operation, Ekati made Canada a leading diamond producer. Ekati currently produces about 4% of the world’s diamonds by weight and 6% by value.

10. The correct answer is D. The world’s most important beach deposits of diamonds lie along the west coasts of Namibia and South Africa. See Lesson 11 “Beach Mining” [p. 9]. After almost 100 years of mining, Namibia’s beach deposits are beginning to become depleted. However, the corresponding offshore marine deposits may hold truly astonishing treasures. Experts believe that up to 1.5 billion carats may be waiting – 90 to 95% gem quality!

11. The correct answer is B. The life span of a diamond pipe mine averages about 30 years. See Lesson 11 “Pipe Mining” [p. 12]. The relatively long producing lives of pipes (compared to alluvial deposits) help to justify the tremendous labor and expense of development.

12. The correct answer is A. For each point of finished diamond weight, at least 1,200 pounds of ore and rock must be excavated. See Lesson 11 “Investment and Labor” [p. 15]. Telling a customer that it took digging 60 tons of ore and rock to end up with a 1-carat diamond can be a great way to “bring home” the concept of value.

13. The correct answer is B. Diamonds can be used to cut other diamonds because of hardness differences linked to crystal structure. See Lesson 12 “Diamonds Cut Diamonds” [p. 3]. All of the traditional techniques used in diamond cutting are related to diamond’s crystal structure. Octahedral directions are the best for cleaving; cubic directions are the best for mechanical sawing; and dodecahedral directions are the best for polishing. (To review crystal forms and directions, see the “Crystal Forms” sidebar in Lesson 9.)

14. The correct answer is A. Mechanical sawing can divide a diamond crystal in directions that yield the best weight retention and shape. See Sawing “Mechanical Sawing” [p. 10]. Sawing a well-formed diamond crystal such as an octahedron or dodecahedron often makes it possible to obtain two round brilliants or princess cuts from the single piece of rough.

15. The correct answer is A. The technique known as bruting is used to form a brilliant cut’s girdle outline. See Lesson 12 “Shaping the Diamond” [p. 12]. Bruting affects the percentage of weight that’s retained from the crystal, and also the symmetry of the finished diamond. So this is a critical step in the cutting process.
16. The correct answer is B. Most automated polishing machines handle everything except the table and star facets. See Lesson 12 “Automated Polishing” [draft pg 17]. Although the use of automated polishing equipment has become widespread, diamond cutting remains very much a process of human art and skill.

17. The correct answer is C. The world’s largest diamond-producing entity is the De Beers Group. See Lesson 13 “Growth and Diversification” [p. 4]. De Beers’ role in the diamond industry has changed significantly in recent years, but the organization is still the leader in production, distribution, promotion, and research.

18. The correct answer is B. The Diamond Promotion Service works inside the industry to make professionals familiar with DTC ad campaigns. See Lesson 13 “Growth and Diversification” [p. 5]. The DPS provides a wide array of services and products designed to help retail jewelry professionals sell diamonds. Be sure to visit the DPS website at www.dps.org to get an overview of all that this important industry organization offers.

19. The correct answer is C. About 80% of all rough diamonds and 50% of all polished diamonds pass through the city of Antwerp. See Lesson 13 “Trading and Cutting Centers” [p. 9]. For further details concerning this vital industry center, visit the website maintained by the Antwerp Diamond High Council at www.hrd.be.

20. The correct answer is D. India cuts about 80% of the world’s diamond, measured by carat weight. See Lesson 13 “Trading and Cutting Centers” [p. 10]. In addition to being the Number 1 diamond cutting center, India is rapidly becoming a major producer of fine diamond jewelry.

21. The correct answer is C. By far the world’s largest retail market for diamonds is the United States. See Lesson 13 “Diamond Retailers” [p. 16]. For most American jewelry stores, diamonds and diamond jewelry also account for about 50% of all sales.

22. The correct answer is A. Diamond’s name is linked to the property of hardness. See Lesson 14 “Nature’s Inspirations” [p. 3]. Another term that comes from the same root (the Greek word adamas) is adamant, which means inflexible or immovable regardless of outside forces.

23. The correct answer is D. A number of cultures have believed that a diamond’s magic is enhanced when it’s given as a gift. See Lesson 14 “Adding to the Spell” [p. 5]. This is a perfect “tidbit” of folklore to share in many diamond presentations.

24. The correct answer is A. Diamond is the birthstone for the month of April. See “Diamonds and Time” [p. 6]. Surveys show that most customers won’t buy a particular gem simply because it’s their birthstone. However, if a gem they like also happens to be their birthstone, that can be one more reason to make the purchase.

25. The correct answer is B. Today, the wedding anniversaries most closely associated with diamonds are the 60th, 25th, and 10th. See Lesson 14 “Diamond Occasions” [p. 8]. Remember, however, that any anniversary is really perfect for a gift of diamonds.