



**Education and Early  
Childhood Development**

**Intermediate Mathematics Assessment**

**Sampler**

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

**1. Which of the following is closest to the value of  $\sqrt{0.82}$  ?**

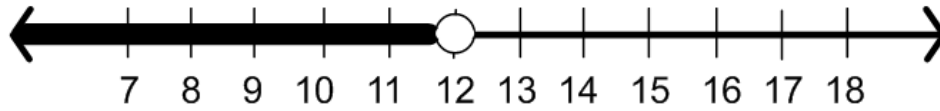
**a.** 0.09

**b.** 0.9

**c.** 9

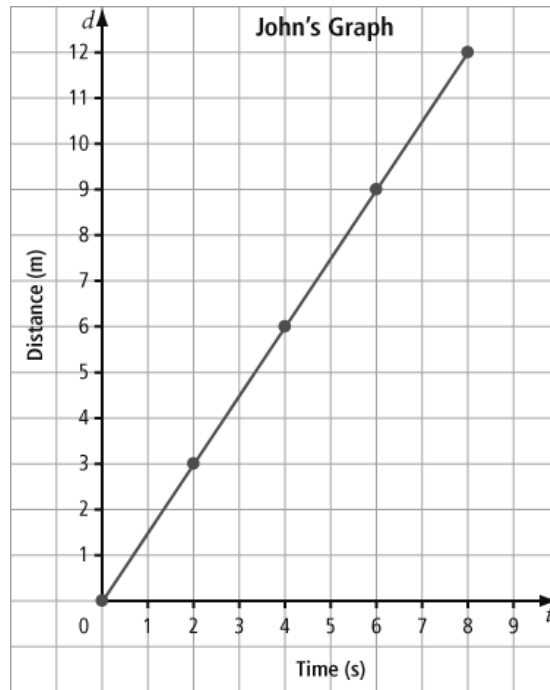
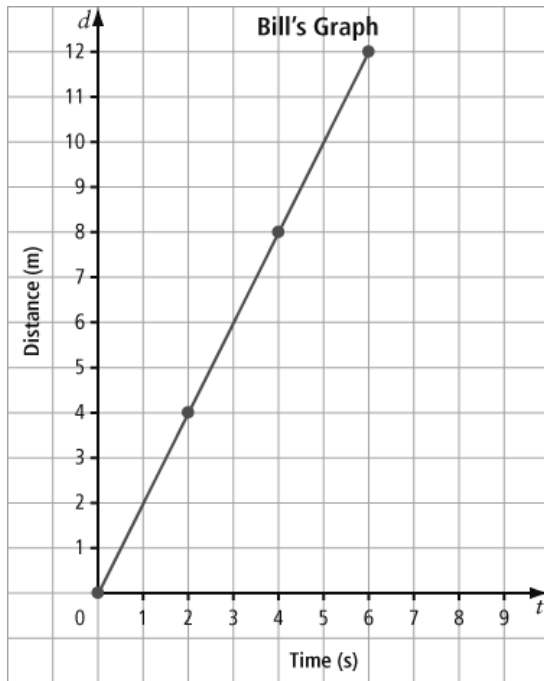
**d.** 90

**2. Write a word statement to represent the inequality shown.**



- a. A number is greater than 12.
- b. A number is greater than or equal to 12.
- c. A number is less than 12.
- d. A number is less than or equal to 12.

3. Using the graphs below, who walked at a faster rate?



- a. Bill
- b. John
- c. The graphs do not show who was faster.
- d. They walked at the same rate.

**4. Simplify**  $(4z^2 + 2z + 2) - (3z - 2z^2 - 3) + (2 + 5z + 3z^2)$ .

**a.**  $3z^2 + 4z + 1$

**b.**  $6z^2 + 4z + 5$

**c.**  $9z^2 + 6z + 7$

**d.**  $9z^2 + 4z + 7$

5. Using the figures below, which linear equation represents the relationship between figure number ( $f$ ) and the number of dots ( $n$ ) in the figure?

Figure 1



Figure 2

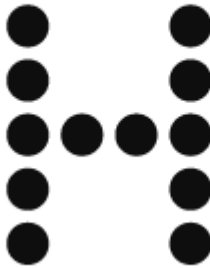
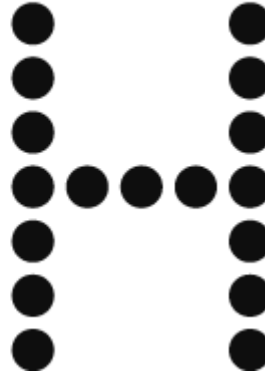


Figure 3



- a.  $f = 5n + 2$
- b.  $n = 5f + 2$
- c.  $n = 2f + 5$
- d.  $n = f + 5$

**6. The weather report says there is a 25% chance of hail. The probability of not having any hail is**

**a.**  $\frac{1}{4}$

**b.**  $\frac{1}{2}$

**c.**  $\frac{3}{4}$

**d.** 1

**7. A school principal surveys only the boys in one class to determine if she should make recess longer. This is an example of**

- a.** bias
- b.** cultural insensitivity
- c.** inappropriate use of language
- d.** poor timing



**8. Expand the expression  $\left[\frac{3}{4}x\right](8x+4)$  using the distributive property.**

**a.**  $6x+3$

**b.**  $\left[8\frac{3}{4}\right]x+4\frac{3}{4}$

**c.**  $6x^2+3x$

**d.**  $\left[8\frac{3}{4}\right]x^2+\left[4\frac{3}{4}\right]x$

9. What is the value of  $\frac{(-5)^6}{(-5)^3}$ ?

a.  $-5$

b.  $-25$

c.  $-125$

d.  $-625$

**10. What is another way of expressing  $7^3$ ?**

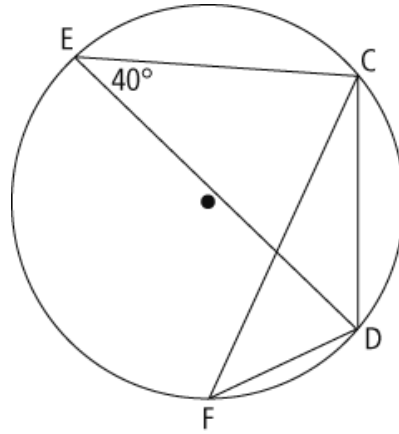
a.  $3^7$

b.  $7 \times 3$

c.  $7 \times 7 \times 7$

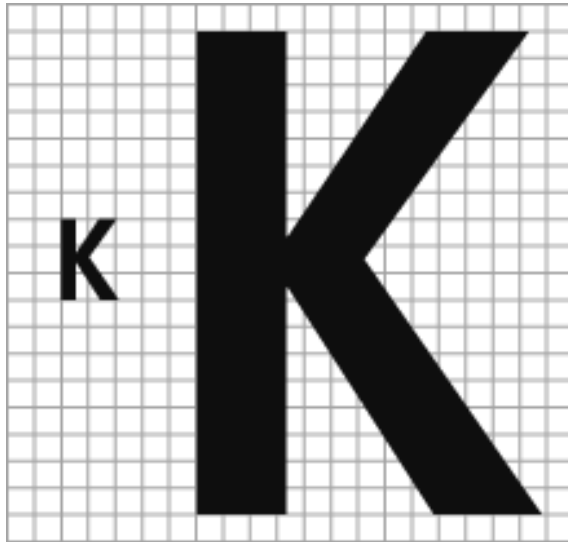
d.  $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$

11. What is the measure of  $\angle CFD$ ?



- a.  $20^\circ$
- b.  $40^\circ$
- c.  $50^\circ$
- d.  $80^\circ$

**12. Compare the letter on the right to the letter on the left. The letter on the right**

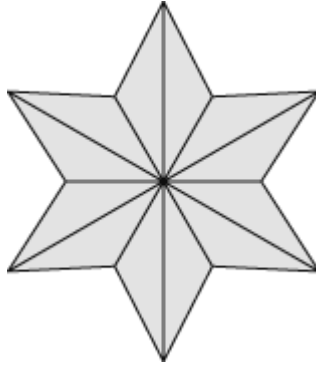


- a. has a scale factor equal to 1
- b. has a scale factor greater than 1
- c. has a scale factor less than 1
- d. has no scale factor

**13. In which situation might privacy be an influencing factor?**

- a.** Students in a class are asked, “Do you like your parents?”
- b.** Every household in the city is mailed a survey asking, “Do you think it is important to maintain the city’s parks?”
- c.** After a winter storm, a travel agency sends out a survey asking, “Would you like to take a holiday in Mexico?”
- d.** A teacher asks her class to complete a survey and print their names on the top of the survey.

**14. The design shown is an example of rotation symmetry. What is the order of rotation?**



- a. 1**
- b. 6**
- c. 8**
- d. 12**

**15. In professional baseball, the first base is a square with an area of 1444 cm<sup>2</sup>. What is the length of one side of the base?**

**a.** 722 cm

**b.** 361 cm

**c.** 38 cm

**d.** 12 cm



**16. Evaluate**  $\frac{4}{9} + \frac{1}{6} \times \frac{2}{3}$

**a.**  $\frac{5}{9}$

**b.**  $\frac{11}{18}$

**c.**  $\frac{7}{9}$

**d.**  $\frac{5}{6}$

**17. Solve**  $2.1\left[\frac{6k}{3} - 4.7\right] = 8.19$

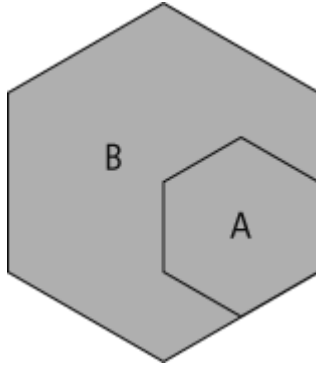
**a.**  $k = 4.3$

**b.**  $k = 8.19$

**c.**  $k = 9.87$

**d.**  $k = 18.06$

**18. Compare hexagon A to hexagon B. Hexagon A has**



- a.** angles that are smaller than the angles in hexagon B
- b.** angles that are proportional to the angles in hexagon B
- c.** angles that are larger than the angles in hexagon B
- d.** angles that are equal to the angles in hexagon B

19. Julia had  $\frac{5}{6}$  of a pizza left over from a party. She gave Brooke  $\frac{2}{5}$  of the leftover pizza. How much of the original pizza did Julia give to Brooke?

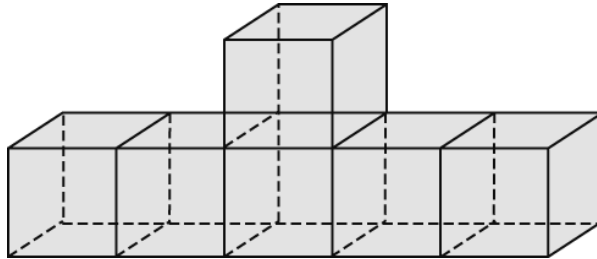
a.  $\frac{7}{30}$

b.  $\frac{1}{3}$

c.  $\frac{7}{11}$

d.  $\frac{2}{3}$

**20. Each cube in the object has sides measuring 2.5 cm. What is the total surface area of the object?**



- a.**  $6.25 \text{ cm}^2$
- b.**  $31.25 \text{ cm}^2$
- c.**  $162.5 \text{ cm}^2$
- d.**  $187.5 \text{ cm}^2$

21. When the following model is simplified, it produces the expression



- a.  $3x^2 + 5x + 2$
- b.  $2x^2 + 2x - 2$
- c.  $-x^2 - 3x - 4$
- d.  $-3x^2 - 5x - 2$

## Solutions

### MULTIPLE CHOICE

- ANS: B                   PTS: 1                   DIF: Easy                   OBJ: Section 2.4  
NAT: N6                   TOP: Determining Square Roots of Rational Numbers  
KEY: rational numbers | square root
- ANS: C                   PTS: 1                   DIF: Average                   OBJ: Section 9.1  
NAT: PR4                   TOP: Representing Inequalities  
KEY: number line | less than | graphic to verbal
- ANS: A                   PTS: 1                   DIF: Difficult                   OBJ: Section 6.2  
NAT: PR2                   TOP: Interpreting Graphs                   KEY: interpreting graphs
- ANS: D                   PTS: 1                   DIF: Difficult                   OBJ: Section 5.3  
NAT: PR6                   TOP: Adding and Subtracting Polynomials  
KEY: polynomial | simplify | subtraction
- ANS: B                   PTS: 1                   DIF: Difficult                   OBJ: Section 6.1  
NAT: PR1                   TOP: Representing Patterns  
KEY: describe patterns | equation from table of values
- ANS: C                   PTS: 1                   DIF: Average                   OBJ: Section 11.3  
NAT: SP4                   TOP: Probability in Society                   KEY: weather | probability
- ANS: A                   PTS: 1                   DIF: Average                   OBJ: Section 11.1  
NAT: SP1                   TOP: Factors Affecting Data Collection                   KEY: bias
- ANS: C                   PTS: 1                   DIF: Difficult                   OBJ: Section 7.2  
NAT: PR7                   TOP: Multiplying Polynomials by Monomials  
KEY: multiplying a binomial by a monomial | distributive property | expand
- ANS: C                   PTS: 1                   DIF: Average                   OBJ: Section 3.2  
NAT: N2                   TOP: Exponent Laws  
KEY: quotient of powers | negative base | exponent laws
- ANS: C                   PTS: 1                   DIF: Average                   OBJ: Section 3.1  
NAT: N1                   TOP: Using Exponents to Describe Numbers  
KEY: repeated multiplication | exponential form
- ANS: B                   PTS: 1                   DIF: Easy                   OBJ: Section 10.1  
NAT: SS1                   TOP: Exploring Angles in a Circle                   KEY: inscribed angle
- ANS: B                   PTS: 1                   DIF: Average                   OBJ: Section 4.1  
NAT: SS4                   TOP: Enlargements and Reductions                   KEY: scale factor | enlargement
- ANS: D                   PTS: 1                   DIF: Average                   OBJ: Section 11.1  
NAT: SP2                   TOP: Factors Affecting Data Collection                   KEY: ethics
- ANS: B                   PTS: 1                   DIF: Average                   OBJ: Section 1.2  
NAT: SS5                   TOP: Rotation Symmetry and Transformations  
KEY: rotation symmetry | order of rotation
- ANS: C                   PTS: 1                   DIF: Average                   OBJ: Section 2.4  
NAT: N5                   TOP: Determining Square Roots of Rational Numbers  
KEY: rational numbers | square root | perfect square | area
- ANS: A                   PTS: 1                   DIF: Difficult                   OBJ: Section 2.3  
NAT: N3 | N4                   TOP: Problem Solving With Rational Numbers in Fraction Form  
KEY: rational numbers | fraction operations | order of operations | add | multiply
- ANS: A                   PTS: 1                   DIF: Average                   OBJ: Section 8.3  
NAT: PR3                   TOP: Solving Equations:  $a(x + b) = c$

- KEY: multi-step equation | division | addition | multiplication | grouping symbol
18. ANS: D                   PTS: 1                   DIF: Average           OBJ: Section 4.4  
NAT: SS3                   TOP: Similar Polygons           KEY: similar polygons
19. ANS: B                   PTS: 1                   DIF: Average           OBJ: Section 2.3  
NAT: N3                   TOP: Problem Solving With Rational Numbers in Fraction Form  
KEY: rational numbers | fraction operations | problem solving
20. ANS: C                   PTS: 1                   DIF: Average           OBJ: Section 1.3  
NAT: SS2                   TOP: Surface Area           KEY: surface area | composite object
21. ANS: B                   PTS: 1                   DIF: Average           OBJ: Section 5.2  
NAT: PR5                   TOP: Equivalent Expressions           KEY: expression | model | simplify