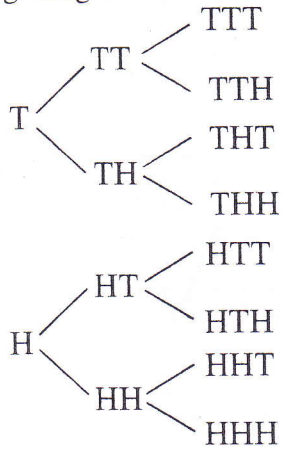


CRCT Mixed Review Units 1 - 5

- ① Use the tree diagram below to predict the probability of flipping one coin 3 times and getting one head and two tails.



- (A) $\frac{1}{2}$
 (B) $\frac{1}{4}$
 (C) $\frac{3}{8}$
 (D) 3
- ② A box contains spools of thread: 3 spools of red, 4 spools of blue, 2 spools of green, and 3 spools of yellow. What is the probability of reaching in the box without looking and picking a red spool?

- (A) $\frac{1}{4}$
 (B) $\frac{1}{5}$
 (C) $\frac{2}{7}$
 (D) $\frac{3}{4}$

③ Solve. $7 - \left(\frac{3}{4}\right)^2 =$

- (A) $6\frac{1}{4}$
 (B) $6\frac{7}{16}$
 (C) $4\frac{3}{4}$
 (D) $5\frac{1}{2}$

- ④ The Sweet Shoppe has 6 flavors of ice cream, 4 toppings, and 3 kinds of sprinkles. How many different sundaes can be made using one flavor of ice cream, one topping, and one kind of sprinkles?

- (A) 13
 (B) 19
 (C) 36
 (D) 72

- ⑤ Write 0.000004723 in scientific notation

- (A) 4.723×10^6
 (B) 4.723×10^{-6}
 (C) $4,723 \times 10^{-6}$
 (D) $.4723 \times 10^6$

- ⑥ Simplify: $(5 - 2)^2 - 4 - 2 \times 6$

- (A) 5
 (B) 18
 (C) -7
 (D) 90

- ⑦ Add: $x^2 + 3x + 8$ and $3x^2 + 9$

- (A) $x^3 + 3x^2 + 3x + 17$
 (B) $4x^2 + 3x + 17$
 (C) $7x^2 + 17$
 (D) $x^2 + 6x + 17$

- ⑧ $\sqrt{6}$ is between

- (A) 5 and 6
 (B) 2 and 3
 (C) 4 and 5
 (D) 3 and 4

- ⑨ Solve: $1 + 3x - 9 = 4x - 7$

- (A) -15
 (B) $-\frac{15}{7}$
 (C) -1
 (D) $-\frac{7}{15}$

10 Solve: $\frac{3x+6}{-2} > -12$

- (A) $x < 24$
- (B) $x > 0$
- (C) $x > 6$
- (D) $x < 6$

11 Solve: $-6 - x \geq 7$

- (A) $x \geq -13$
- (B) $x \leq 13$
- (C) $x \leq -13$
- (D) $x \geq 13$

12 $\sqrt{77}$ lies between

- (A) 7 and 8
- (B) 8 and 9
- (C) 76 and 78
- (D) 5 and 6

13 Multiply: $(2x^2y)(3xy^3)(-4x^3y^2)$

- (A) $-24x^6y^6$
- (B) $-24x^8y^9$
- (C) $-24x^{27}y^{16}$
- (D) $24x^6y^7$

14 The sum of two numbers is fourteen. The sum of six times the smaller number and two equals four less than the product of three and the larger number. Find the two numbers.

- (A) 6 and 8
- (B) 5 and 9
- (C) 3 and 11
- (D) 4 and 10

15 Scientists believe that the sun is about 4,600,000,000 miles away from earth. How do you write this distance in scientific notation?

- (A) 4.6×10^8
- (B) 46×10^7
- (C) $4,600 \times 10^6$
- (D) 4.6×10^9

16 Solve: $2(x+5) + 4(2x-1) = -14$

- (A) $x = -2$
- (B) $x = -1$
- (C) $x = -1\frac{4}{5}$
- (D) $x = -1\frac{2}{10}$

17 Simplify: $\frac{(3a^2)^3}{a^3}$

- (A) $27a^3$
- (B) $\frac{9a^6}{a^3}$
- (C) $9a^3$
- (D) $\frac{3a^6}{a^3}$

18 Which of the following numbers has the same value as $|-10| - (-5)^2$?

- (A) -15
- (B) 0
- (C) 5
- (D) 20

19 Which of the following is equal to 2.6×10^3 ?

- (A) 0.0026
- (B) 0.026
- (C) 260
- (D) 2,600

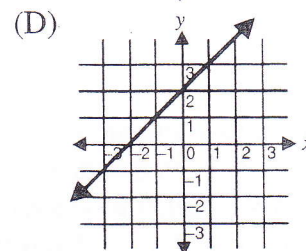
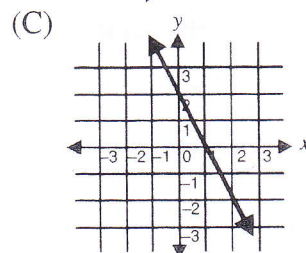
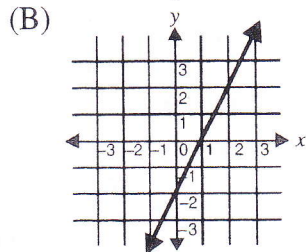
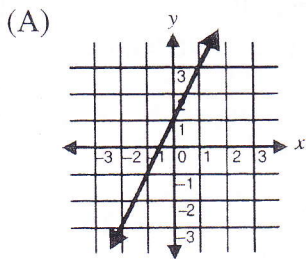
20 Solve: $-3x - 2 = 17$

- (A) $-6\frac{1}{3}$
- (B) -5
- (C) 12
- (D) 16

21 Which of the following statements is false?

- (A) $\{t, o\} \subseteq \{\text{letters in the word "today"}\}$
- (B) $8 \notin \{0, 2, 4, 6, 8\}$
- (C) $\emptyset = \{ \}$
- (D) $\{a, b, c\} \cap \{b, c, d, e\} = \{b, c\}$

22 Which of the following is the graph of the equation $y = x + 2$?



23 $\sqrt{26}$ is between

- (A) 5 and 6
- (B) 2 and 3
- (C) 4 and 5
- (D) 3 and 4

24 There are ten balls numbered 1 to 10 in a paper bag. Amanda picks out a ball without looking and then puts it back and mixes up the balls. If she does this 3 times, what is the probability that she will pick the number 4 each time?

- (A) $\frac{1}{10}$
- (B) $\frac{1}{30}$
- (C) $\frac{1}{100}$
- (D) $\frac{1}{1000}$

25 What is $\{1, 2, 3, 4, 5\} \cap \{2, 4, 6, 8, 10\}$?

- (A) $\{1, 2, 3, 4, 5, 6, 8, 10\}$
- (B) $\{2, 4\}$
- (C) $\{1, 2, 3, 4, 5\}$
- (D) $\{1, 3, 5, 6, 8, 10\}$

26 Tim tosses three nickels on the ground. What is the probability that all three will show "heads"?

- (A) $\frac{1}{8}$
- (B) $\frac{3}{8}$
- (C) $\frac{1}{2}$
- (D) $\frac{8}{27}$

27 What is the complement of the set {all vowels in the alphabet}?

- (A) {all consonants in the alphabet}
- (B) {all vowels in the alphabet}
- (C) {all letters in the alphabet}
- (D) {a, b, c, d, e}

28 Megan calculates that the diagonal of a rectangular table top is $\sqrt{80}$ inches. What is $\sqrt{80}$ in simplest form?

- (A) $4\sqrt{5}$
- (B) $2\sqrt{10}$
- (C) $2\sqrt{20}$
- (D) 40

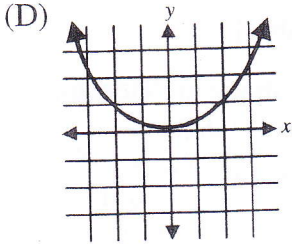
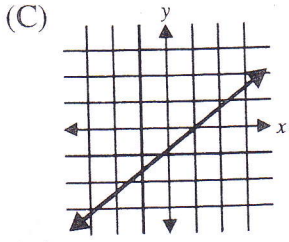
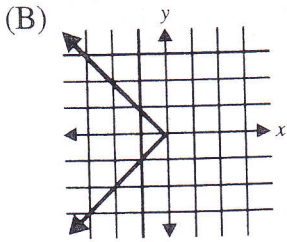
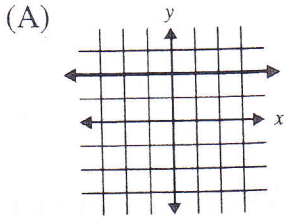
29 Simplify $4^2 \div 8 \times 2 - 4$

- (A) -3
- (B) -4
- (C) -1
- (D) 0

30 Find the positive value of $\sqrt{64}$.

- (A) 4
- (B) 8
- (C) 16
- (D) 32

31 Which of the following graphs is not a function?



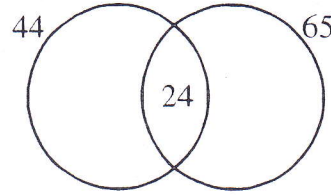
32 Which of the following relations is a function?

- (A) $\{(0, -1) (1, -1) (0, -2)\}$
- (B) $\{(-1, 1) (-1, -1) (0, 0)\}$
- (C) $\{(2, 1) (1, 0) (0, -1)\}$
- (D) $\{(-1, 1) (-1, 0) (-1, -1)\}$

33 Which equation is non-linear?

- (A) $y = \frac{1}{4}x + 2$
- (B) $y = -x^2$
- (C) $x + 2y = -4$
- (D) $2x - 4 = 0$

34 There are 44 students on the track team and 65 students on the swimming team. Of these students, 24 are on both teams. How many total students are there that are on the swimming team, track team or both teams?



- (A) 61
- (B) 73
- (C) 85
- (D) 133

35 Which expression does not have the same value as the other three?

- (A) 0.5^4
- (B) 4^{-2}
- (C) 6.25×10^2
- (D) 0.25^2

36 Solve: $3x - 2 = 17$

- (A) $6\frac{1}{3}$
- (B) 5
- (C) $12\frac{2}{3}$
- (D) $16\frac{1}{4}$

37 Write 5^{-3} as a fraction.

- (A) $\frac{1}{15}$
- (B) $\frac{3}{5}$
- (C) $\frac{5}{3}$
- (D) $\frac{1}{125}$

38 $3^{-3} \cdot 3^5 =$

- (A) $\frac{1}{9^{15}}$
- (B) $\frac{1}{3^{15}}$
- (C) 81
- (D) 9