MATHS

BOOKS - INDEPENDENTLY PUBLISHED MATHS (ENGLISH)

ELEMENTARY ALGEBRA

Practice Questions

1. A bag contains 4 red balls, 5 green balls, and 3 blue balls. If a ball is selected at random from the bag,

what is the probability that the ball selected will be green ?

A. $1/5$

B. $1/12$

C. $5/60$

D. $5/12$

Answer: D

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2. Julia went to Cancun during summer vaction. She recorded the number of pesos she spent on the first

five days of her trip in the table below. How many pesos did she spend on the sixth day to make the mean expenditure per day (for six days) 220?

July	1	2	3	4	5	6
Pesos spent	250	100	150	100	140	?

A. 120

B. 200

C. 220

D. 320

Answer: D

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3. What is the median of the following 9 numbers?

61, 14, 72, 25, 36, 48, 57, 17, 81

A. 14

B. 81

C. 48

D. 5

Answer: C

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4. Find the median of the following set of data. 42, 13, 76, 5, 21, 13, 37

A. 33

B. 21

C. 33.5

D. 29

Answer: D

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5. At a give lunch period, 75% of the students buying lunch selected pizza. 60% of the students who did not select pizza selected chicken nuggets. What percent of the students selected something other than pizza or chicken nuggets ?

A. 0

B. 0.1

C. 0.15

D. 0.25

Answer: B

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6. The cicrcumference of a circle is give by the formula $C = \pi d$ where d is the diameter of the circle. The formula for the area of a circle is $A = \pi r^2$. If the area of the circle is 9π, what is the circumference of the circle ?

A. 9π

B. 9

C. 6π

D. 6

Answer: C

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7. The Pythagorean theorem is $a^2 + b^2 = c^2$. Solbe for a.

A. $a = c - b$

B. $a = c^2 - b^2$

C. $a = \sqrt{c - b}$

D. $a = \sqrt{c^2 - b^2}$

Answer: D

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8. The perimeter of an ellipse is found using the formula $p = \frac{\pi}{2}\sqrt{2\left(h^2 + w^2\right)}$. Solve this formula for w.

A. $\sqrt{\frac{2p^2}{\pi^2} - h^2} = w$

B. $\sqrt{\frac{2}{\pi^2}\left(p^2 - h^2\right)} = w$

C. $w = \frac{\pi}{2}\sqrt{\left(h^2 + p^2\right)}$

D. $w = \frac{\pi}{2}\sqrt{\left(p^2 + h^2\right)}$

Answer: A

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9. One light flashes green every 15 seconds and a second light flashes red every 6 seconds. If they flash together and you begin counting seconds, after many seconds will they next flash together?

A. 75

B. 60

C. 30

D. 18

Answer: C

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10. Solve $|x - 13| = 5$ for x.

A. 18

B. 8 or 18

C. -18

D. 8

Answer: B

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11. Solve $|x - 13| > 5$ for x.

A. 18

B. 8 or 18

C. $x < 8$ or $x > 18$

D. 8

Answer: C

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12. Gordon recently learned that his shadow is proportional to his height. He also learned that the shadows of other objects are proportional to their height. At three o'clock, his shadow measured 4 feet and the shadow of the tree in his front yard

measured 18 feet. If Gordon is 6 feet tall, how tall is the tree ?

A. 108 feet

B. 72 feet

C. 27 feet

D. 24 feet

Answer: C

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13. Solve $2(4x + 7) - 3(2x - 4) = 20$ for x.

A. $\frac{9}{7}$

B. -3

C. 9

D. 13

Answer: B

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14. Josie would like to have wireless Internet in her apartment. Her phone compony charges a $60 installation fee and $39.99 per month. Write an

eqaution that will help Josie determine her cost (c) to have wireless for any given number of month (m).

A. $60 + 39.99m = c$

B. $39.99 + 60m = c$

C. $60 = 39.99m$

D. $c = 60 - 39.99m$

Answer: A

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15. The product of $\left(3m^2n^7\left(-4m^4n^3\right)\right.$ is equivalent to :

A. $-12m^5n^{10}$

B. $-12m^4n^4$

C. $-12m^{12}n^4$

D. $-12m^6n^{10}$

Answer: D

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16. What polynomial must be added ot $7x^2 + 14x - 8$ to result in a sum of $5x^2 + 18x + 1$?

A. $-2x^2 - 4x + 7$

B. $2x^2 - 4x + 9$

C. $-2x^2 + 4x + 7$

D. $2x + 4x + 9$

Answer: C

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17. Which is the equivalent form of $(x - 3)(x^2 + 4x - 8)$?

A. $x^3 + x^2 - 20x + 24$

B. $x^3 + 7x^2 + 4x - 24$

C. $x^3 + 7x^2 + 20x - 24$

D. $x^3 + x^2 + 4x + 24$

Answer: A

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18. Which of the following is the factored form of $x^2 - 7x + 10$?

A. $(x - 7)(x - 3)$

B. $(x + 4)(x + 3)$

C. $(x - 4)(x - 3)$

D. $(x-5)(x-2)$

Answer: D

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19. Which of the following is the factored form of the expression $3x^2+5x-12$?

A. $(3x-4)(x+3)$

B. $(3x+4)(x-3)$

C. $(3x-6)(x+2)$

D. $(3x+6)(x-2)$

Answer: A

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20. Which of the following is not a solution of $3(x-8)(x-3)(x+4)(x+7)=0$?

A. -4

B. 0

C. 3

D. 8

Answer: B

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Exercise

1. To increase the mean of 8 numbers by 5, by how much would the sum of the 8 numbers need to increase ?

A. 5

B. 10

C. 20

D. 40

Answer: D

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2. When $\frac{1}{7}n + 3 = \frac{-1}{5}(n - 20)$, what is the value of n?

A. $\frac{1}{12}$

B. $\frac{35}{12}$

C. $\frac{12}{35}$

D. 12

Answer: B

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3. Cathy has coupon for 10% off at her favorite CD store. When she arrives at the store she finds that the CDs are already on sale for 25% off. She would like to put an expression into her calculator to determine the cost of a CD after the 25% and additional 10% discounts. Using p for the original marked price, which of the following expressions will give her the discounted price ?

A. $p - .35p$

B. $p - .35$

C. $p - .325p$

D. $p - .325$

Answer: C

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4. For all x, $(2x+5)^2(-3x+7) = ?$

A. $-12x^2+70$

B. $-6x^2-x+35$

C. $4x^2+20x+25$

D. $-12x^3-32x^2+65x+175$

Answer: D

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5. The Key Club at the local high school is sponsoring an Easter egg hunt at the park. 250 children register for the hunt. The Key Clb members decide that it is more fair if children are divided into four age catagories, as shown in the following table.

Age category	Under 2	$2-5$	$6-10$	Over 10
Number of children	24	53	125	47

70 eggs that have special prizes in them will be distributed proportionally to each age category. How many prizes will the club members award to the children in the 6- 10 age range ?

A. 18

B. 27

C. 32

D. 35

Answer: D

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6. The number 0.07 is 1000 times as large as which of the following numbers ?

A. 0.7

B. 0.07

C. 0.007

D. 7.0E-5

Answer: D

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7. Which of the following is equal to $\frac{\frac{3}{4}-\frac{1}{3}}{\frac{3}{4}+\frac{1}{3}}$?

A. $\frac{5}{12}$

B. $\frac{-5}{12}$

C. $\frac{-5}{13}$

D. $\frac{5}{13}$

Answer: D

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8. Find the simplified form of $\frac{-10x^2 - 35x + 20}{3x^2 + 12x}$.

A. $\frac{-5(2x - 1)}{3x}$

B. $\frac{-5}{3}$

C. $\frac{-5(2x^2 + 7x + 4)}{3x^2 + 12x}$

D. $-7x^2 - 23x + 20$

Answer: A

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9. If $8 - 5x = -47$, then 2x = ?

A. 7.8

B. 15.6

C. 11

D. 22

Answer: D

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10. The formula d = rt is called the distance formula. In this formula, drepresents the distance traveled, r represents the rate of speed, and t represents the time traveled. If a person travels 90 miles in $2\frac{1}{2}$ hours, what is the value of r?

A. 36 mph

B. 45 mph

C. 72 mph

D. 180 mph

Answer: A

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11. The product of $(-4x^6y^7)(-2xy^3)$ is :

A. $8x^7y^{10}$

B. $8x^6y^{10}$

C. $8x^6y^{21}$

D. $8x^7y^{21}$

Answer: A

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12. A bag contains 4 red gumballs, 7 green gumballs, 2 white gumballs , and 5 blue gumballs. How many additional white gumballs nust be added to the 18 gumballls is the bag so thaat the probability of drawing a gumball that is not white is $\frac{2}{3}$?

A. 3

B. 4

C. 5

D. 6

Answer: C

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