# MATHS

# BOOKS - PRINCETON MATHS (ENGLISH)

# OTHER ALGEBRA STRATEGIES

## Example

**1.** Zoe won the raffle at a fair. She will receive the prize money in 5 monthly payments. If

each payments is half as much as the previous month's payments and the total of the payments is $496, what is the amount of the first payment?

A. 256

B. 96

C. 84

D. 16

**Answer: A**

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**2.** $2x + y = 6$

$7x + 2y = 27$

The system of equations above is satisfied by which of the following ordered pairs $(x, y)$?

A. $(-5, 4)$

B. $(4, -2)$

C. $(5, 4)$

D. $(5, -4)$

**Answer: D**

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**3.** A bakery sold exactly 855 of the cupcakes it baked on Tuesday. Which of the following could be the total number of cupcakes baked on Tuesdays?

A. $150$

B. $145$

C. $140$

D. $130$

**Answer: C**

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**4.** For what value of x is $|2x + 3| + 5 = 0$?

A. $-4$

B. $0$

C. $4$

D. There is no such value of x.

**Answer: D**

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**5.** If $\frac{x^2+6x-16}{x^2-5x+6}=\frac{-6}{x^2-2x-3}$, then which of the following could be a value of x?

A. $-7$

B. $-5$

C. $0$

D. $6$

**Answer: A**

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6. $\sqrt{2x-k}=3-x$

If k=3, what is the solutions set of the equation above?

A. $\{-2\}$

B. $\{2\}$

C. $\{2, 6\}$

D. $\{6\}$

**Answer: B**

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**7.** Which of the following is equivalent to the expressions $\frac{7x-4}{x+9}$?

A. $7-\frac{4}{x+9}$

B. $7-\frac{67}{x+9}$

C. $7-\frac{4x}{9}$

D. $\frac{7-4x}{9}$

**Answer: B**

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**8.** Durings a special sale at furniture store. Erica bought a floor lamp at a 10$ discount. She paid total of t dollars, which included the dicounted price the floor lamp and 6% sales tax on the discounted price. In terms of t, what was the original price of the floor lamp?

A. $\frac{t}{0.96}$

B. $(0.9)(1.06)t$

C. $\frac{t}{(0.9)(1.06)}$

D. $0.96t$

**Answer: C**

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**9.** If 60 equally priced downloads cost x dollars, then how much do 9 downloads cost?

A. $\frac{20}{3x}$

B. $\frac{20x}{3}$

C. $\frac{60x}{9}$

D. $\frac{3x}{20}$

**Answer: D**

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**10.** A watch loses x minutes every y hours. At this rate, how many hours will the watch lose in one week?

A. $7xy$

B. $\frac{5y}{2x}$

C. $\frac{14y}{5x}$

D. $\frac{14x}{5y}$

**Answer: D**

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**11.** Mammoth Printing Company charges a fee of $28 to print an overized poster, and $7 for each color of ink used in the poster. Colossal Printing charges a fee of $34 to print an oversized poster and $5.50 for each color of

ink used. If x represents the number of colors of ink used to print poster, what are all the values of x for which Mammoth Printing Company would charges more to print the poster than Colossal Printing?

A. $x < 4$

B. $2 \leq x \leq 4$

C. $4 \leq x \leq 7$

D. $x > 4$

**Answer: D**

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**12.** $n = 1.273 - 4p$

The equation above was used by the cafeteria in a large public high school to model the relationship between the number of slices of pizza, n, sold daily and the price of a slice of pizza, p in dollars. What does the number 4 represents in this equation?

A. For every $4 the price of pizza decrease, the caferia sells 1 more slice of pizza.

B. For every dollar the price of pizza decrease, the caferia sells 4 more slice of pizza.

C. For every $4 the price of pizza increase, the caferia sells 1 more slice of pizza.

D. For every dollar the price of pizza increase, the caferia sells 4 more slice of pizza.

**Answer: B**

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**13.** $7x + y = 133$

Jaffrey has set a monthly budget for purchasing frozen blended mocha drinks from his local SpendBucks coffee shop. The equations above can be used to model amount of his budget, y, in dollars that remains after buying coffee for x days in a month. What does it mean that (19.0) is a solution to this equation?

A. Jeffrey starts the month with a budget of $19.

B. Jeffrey spends $19 on coffee every day.

C. It takes 19 days for Jeffrey to drink 133 cups of coffee.

D. It takes 19 days for Jeffrey to run out of money in his budget for purchsing coffee.

**Answer: D**

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## Algebra Strategies Drill 1 No Calculator Section

**1.** The length of a certain rectangle is twice the width. If the area of the rectangle is 128, what is the length of the rectangle.

A. $4$

B. $8$

C. $16$

D. $21\frac{1}{3}$

**Answer: C**

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**2.** If $xy < 0$, which of the following must be true?

I. $x + y = 0$

II. $2x - 2y < 0$

III. $x^2 + y^2 > 0$

A. I only

B. III only

C. I and III

D. II and III

**Answer: B**

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**3.** If $\frac{\sqrt{x}}{2} = 2\sqrt{2}$, what is the value of x?

A. $4$

B. $16$

C. $16\sqrt{2}$

D. $32$

**Answer: D**

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**4.** If $y = 3^x$ and x and y are both integers, which of the following is equivalent to $9^x + 3^{x+1}$?

A. $y^3$

B. $3y + 3$

C. $y(y+3)$

D. $y^2+3$

**Answer: C**

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## Algebra Strategies Drill 2 Calculator Permitted Section

**1.** If Alex can fold 12 napkins in x minutes, how many napkins can be fold in y hours?

A. $\frac{720}{xy}$

B. $\frac{xy}{720}$

C. $\frac{720y}{x}$

D. $\frac{720x}{y}$

**Answer: C**

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**2.** Nails are sold in 8-ounces and 20-ounce boxes. If 50 boxes of nails were sold and the total weight of the nails sold was less than

600 ounces, what is the greatest possible number of 20-ounce boxes that could have been sold?

A. 33

B. 25

C. 17

D. 16

**Answer: D**

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**3.** If a is 63% of x and c is $\frac{3}{8}$ of x, which of the following is the closest to the ratio of a to c?

A. $0.236$

B. $0.381$

C. $0.595$

D. $1.680$

**Answer: D**

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**4.** If $c = \frac{1}{x} + \frac{1}{y}$ and $x > y > 0$, then which of the following equal to $\frac{1}{c}$?

A. $x + y$

B. $x - y$

C. $\frac{x + y}{xy}$

D. $\frac{xy}{x + y}$

**Answer: D**

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**5.** A gas station sells regular gasoline for $2.39 per gallon and premium gasoline for $2.79 per gallon. If the gas station sold a total of 550 gallons of both types of gasoline in one day for a total of $1.344.50. how many gallons of premium gasoline were sold?

A. $25$

B. $75$

C. $175$

D. $475$

**Answer: B**

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**6.** There are k gallons of gasoline available to fill a tank. After d gallons have been pumped in terms of k and d, what percent of the gasoline has been pumped?

A. $\frac{100d}{k}\ \%$

B. $\frac{k}{100d}\ \%$

C. $\frac{100k}{d}\ \%$

D. $\frac{100(k-d)}{k}\%$

**Answer: A**

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