(4|\| j00Z Ph19Ur3 0U7 \/\/|-|@ 1'/\/\ $4'/1|\|9 UP |-|3r3? 1 |-|0P3 17 |-|4$|\|'7 74|<3|\| 4\/\/4'/ Phr0/\/\ j00r /\/\47|-| |-|0/\/\3\/\/0r|< :)

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. Samir can type 85 words per minute. How long will it take him to type 2800 words? Round to the nearest minute.

    a. 27 minutes   c. 33 minutes
    b. 41 minutes   d. 40 minutes

_____ 2. A dirt bike with a 2-stroke engine requires 15 L of gas to be mixed with 1.5 L of oil. How much oil will you need to mix with 25 L of gas to fill up your dirt bike? Round to 1 decimal place.

    a. 250.0 L of oil   c. 0.9 L of oil
    b. 2.5 L of oil   d. 3.0 L of oil

_____ 3. Athena runs the 1500 m race in 4 minutes and 40 seconds. If her pace stays the same, how long will it take her to run 5 km? Round to 2 decimal places.

    a. 15.56 minutes   c. 12.45 minutes
    b. 17.12 minutes   d. 18.67 minutes

_____ 4. To mix juice from concentrate, you must use a ratio of 6 cups of water to 3 cups of concentrate. If you want to make 10 cups of juice, how much concentrate and water do you need? Round to 1 decimal place.

    a. 6.7 cups of water, 3.3 cups of concentrate
    b. 0.6 cups of concentrate, 9.4 cups of water
    c. 2.0 cups of water, 8.0 cups of concentrate
    d. 0.4 cups of water, 9.6 cups of concentrate

_____ 5. To mix juice from concentrate, you must use a ratio of 1 cups of concentrate to 3 cups of water. If you want to make 10 cups of juice, how much concentrate and water do you need?

    a. 0.23 cups of concentrate, 9.77 cups of water
    b. 2.5 cups of concentrate, 7.5 cups of water
    c. 0.33 cups of concentrate, 9.67 cups of water
    d. 0.9 cups of concentrate, 9.1 cups of water

_____ 6. A chainsaw's engine uses a mixture of 30 L of gas and 2 L of oil. How much oil must you mix with 5 L of gas to refuel the chainsaw?

    a. 0.33 L of oil   c. 0.4 L of oil
    b. 12 L of oil   d. 75 L of oil

____ 7. A 2-stroke dirt bike requires 15 L of gas to be mixed with 4 L of oil. How much oil do you need to fill up your dirt bike if you use 24 L of gas?

a.	90 L of oil	c.	2.5 L of oil
b.	7.68 L of oil	d.	6.4 L of oil

____ 8. If 4 cans of paint cover 192 m² of wall space, how many cans of paint will you need to cover 270 m²?

a.	6 cans of paint	c.	9 cans of paint
b.	5 cans of paint	d.	3 cans of paint

____ 9. If 5 cm on a map represents 5 km of actual ground, how many centimetres would 25 km of actual ground be on the map?

a.	25 cm	c.	1 cm
b.	20 cm	d.	25 cm

____ 10. A recipe for chocolate chip cookies contains:

- $2\frac{1}{4}$ cups of flour

- $\frac{3}{4}$ cups of brown sugar

- 1 cup of butter

- $1\frac{1}{2}$ cup of chocolate chips

What is the ratio of flour to chocolate chips?

a.	5:2	c.	3:2
b.	2:3	d.	1:3

____ 11. 30 calculators cost $174.00. How much does 1 calculator cost?

a.	$5.17	c.	$2.90
b.	$9.28	d.	$5.80

____ 12. It cost Steve $135.75 to buy 15 albums from an online music store. How much did 1 album cost?

a.	$14.48	c.	$4.53
b.	$1.66	d.	$9.05

____ 13. Ned is a pool cleaner. He offers a deal in which he charges $1000.00 to clean your pool 20 times. How much money do you save per cleaning using the deal if it regularly costs $55.00 for one cleaning?

a.	$100.00	c.	$50.00
b.	$5.00	d.	$10.00

_____ 14. If 12 bananas cost $4.68, how much does 1 banana cost?

    a. $0.39   c. $0.35
    b. $0.31   d. $0.55

_____ 15. If 3 kg of tomatoes costs $10.20, how much will you pay for 8 kg?

    a. $27.20   c. $21.76
    b. $32.64   d. $27.70

_____ 16. Noreen is placing tile on her kitchen floor that measures 7.5 m by 4.5 m. The tile costs $16.15 per square metre. How much will Noreen spend on tile?

    a. $436.05   c. $387.60
    b. $654.07   d. $545.06

_____ 17. Which price is the best deal?

    i)   12 pens for $15.64
    ii)   8 pens for $10.92
    iii)   3 pens for $3.75
    iv)   2 pens for $2.90

    a.   i   c.   iii
    b.   ii   d.   iv

_____ 18. Which of the following packages of deli meats has the lowest unit price?

    i) $1.89/100 g
    ii) $4.80/250 g
    iii) $5.97/300 g
    iv) $3.34/157 g

    a.   i)   c.   iii)
    b.   ii)   d.   iv)

_____ 19. What is the difference in price per unit between chicken sold at $23.24/kg and turkey sold at $5.17/250 g?

    a. $3.07   c. $2.56
    b. $0.11   d. $2.05

Problem

   1. A restaurant buys a 4-lb jar of peanut butter for $10.99.

    a) The restaurant bought $43.96 worth of peanut butter. How many pounds of peanut butter were purchased?

    b) How much would it cost the restaurant to buy 32 lb of peanut butter?

2. A recipe for minestrone soup contains:
   • 4 cups diced tomatoes
   • 8 cups chicken broth
   • 4 cups water
   • 1 cup beans

   a) What is the ratio of chicken broth to water?

   b) What is the ratio of tomatoes to beans?

   c) What is the ratio of beans to chicken broth?

3. Lumber is purchased by the foot. To purchase 6 pieces of lumber that are each 8 feet long costs $84.00. How much will it cost to purchase 240 feet of lumber?

4. The cost of a pack of 4 hamburgers is $4.89, the cost of a pack of 12 buns is $1.29, and the cost of 24 slices of cheese is $3.69. What is the cost of 5 cheeseburgers? (1 hamburger, 1 slice of cheese, and 1 bun)

5. The cost of a pack of 12 hotdogs is $4.79, the cost of a pack of 6 buns is $1.29, and the cost for 24 slices of cheese is $4.19. What is the cost of 3 cheesedogs? (1 hotdog, 1 slice of cheese, and 1 bun)

6. Three grocery stores have advertised their price for packages of pork chops:

Store A	$3.25/500 g
Store B	$5.85/kg
Store C	$11.38/2 kg

   a) What is the unit price of pork chops at each store, per gram? Give your answer to 4 decimal places.

   b) What is the cheapest way to purchase 3.5 kg without any wasted meat?

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Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Rate
2. ANS: B PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
3. ANS: A PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Rate
4. ANS: A PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
5. ANS: B PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
6. ANS: A PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
7. ANS: D PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
8. ANS: A PTS: 1 DIF: Moderate REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
9. ANS: D PTS: 1 DIF: Moderate REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
10. ANS: C PTS: 1 DIF: Easy REF: 1.1
    OBJ: Number LOC: N-SO1 TOP: Proportional Reasoning
    KEY: Ratio
11. ANS: D PTS: 1 DIF: Easy REF: 1.2
    OBJ: Number LOC: N-SO1 TOP: Unit Price
12. ANS: D PTS: 1 DIF: Easy REF: 1.2
    OBJ: Number LOC: N-SO1 TOP: Unit Price
13. ANS: B PTS: 1 DIF: Moderate REF: 1.2
    OBJ: Number LOC: N-SO1 TOP: Unit Price
14. ANS: A PTS: 1 DIF: Easy REF: 1.2
    OBJ: Number LOC: N-SO1 TOP: Unit Price
15. ANS: A PTS: 1 DIF: Easy REF: 1.2
    OBJ: Number LOC: N-SO1 TOP: Unit Price

16. ANS: D   PTS: 1   DIF: Moderate   REF: 1.2
     OBJ: Number   LOC: N-SO1   TOP: Unit Price
17. ANS: C   PTS: 1   DIF: Easy   REF: 1.2
     OBJ: Number   LOC: N-SO1   TOP: Unit Price
18. ANS: A   PTS: 1   DIF: Easy   REF: 1.2
     OBJ: Number   LOC: N-SO1   TOP: Unit Price
19. ANS: C   PTS: 1   DIF: Moderate   REF: 1.2
     OBJ: Number   LOC: N-SO1   TOP: Unit Price

PROBLEM

1. ANS:
   a) Calculate the number of jars of peanut butter the restaurant would get for $43.96.
      $43.96 ÷ $10.99 = 4

      The restaurant would get 4 jars of peanut butter.

      Multiply by the size of each peanut butter jar.
      4 lb/jar × 4 jars = 16

      The restaurant would get 16 lb of peanut butter.

   b) Calculate how many jar of peanut butter the restaurant would need to buy.
      32 lb ÷ 4 lb/jar = 8

      The restaurant would need to buy 8 jars of peanut butter.

      Calculate the cost.
      8 jars × $10.99/jar = $87.92

      It would cost the restaurant $87.92 to buy 32 lb of peanut butter.

   PTS: 1   DIF: Easy   REF: 1.1   OBJ: Number
   LOC: N-SO1   TOP: Proportional Reasoning   KEY: Rate
2. ANS:
   a) The recipe includes 8 cups of chicken broth and 4 cups of water.
      chicken broth:water = 8:4
      chicken broth:water = 2:1

   b) The recipe includes 4 cups of tomatoes and 1 cup of beans.
      tomatoes:beans = 4:1

   c) The recipe includes 1 cup of beans and 8 cups of chicken broth.
      beans:chicken broth = 1:8

   PTS: 1   DIF: Easy   REF: 1.1   OBJ: Number
   LOC: N-SO1   TOP: Proportional Reasoning   KEY: Ratio

3. ANS:
Calculate the cost of 1 piece of 8-foot lumber.
$$\frac{\text{price of 8 pieces}}{\text{8 pieces}} = \frac{\text{price of 1 piece}}{\text{1 price}}$$

$$\frac{\$84.00}{8} = \frac{x}{1}$$

$$\$14.00 = x$$

One piece of 8-foot lumber costs $14.00.

Calculate the cost of 1 foot of lumber.
$14.00 \div 8 = \$1.75$

Multiply to calculate the cost of 240 feet of lumber.
$\$1.75 \times 240 = \$420.00$

The cost to purchase 240 feet of lumber is $420.00.

PTS: 1   DIF: Moderate   REF: 1.1   OBJ: Number
LOC: N-SO1   TOP: Proportional Reasoning   KEY: Rate

4. ANS:
Calculate the unit cost of each ingredient.

Hamburger:
$\$4.89 \div 4 = \$1.22$

Bun:
$\$1.29 \div 12 = \$0.11$

Cheese:
$\$3.69 \div 24 = \$0.15$

Calculate the cost to make 5 cheeseburgers.
Cost = 5($1.22 + $0.11 + $0.15)
Cost = $7.42

It will cost $7.42 to make 5 cheeseburgers.

PTS: 1   DIF: Moderate   REF: 1.2   OBJ: Number
LOC: N-SO1   TOP: Unit Price

5. ANS:
    Calculate the unit cost of each ingredient.

    Hotdog:
    $4.79 ÷ 12 = $0.40

    Bun:
    $1.29 ÷ 6 = $0.21

    Cheese:
    $4.19 ÷ 24 = $0.17

    Calculate the cost to make 3 cheesedogs.
    Cost = 3($0.40 + $0.21 + $0.17)
    Cost = $2.37

    It will cost $2.37 to make 3 cheesedogs.

    PTS: 1   DIF: Moderate   REF: 1.2   OBJ: Number
    LOC: N-SO1   TOP: Unit Price
6. ANS:
    a) Calculate the unit price of each package of pork chops.

    | Store A | $3.25/500 g | $3.25 ÷ 500 g = $0.0065/g |
    | Store B | $5.85/kg | $5.85 ÷ 1000 g = $0.0059/g |
    | Store C | $11.38/2 kg | $11.38 ÷ 2000 g = $0.0057/g |

    b) The best way to purchase 3.5 kg without any wasted meat is to buy one of each size of package.

    Cost = $3.25 + $5.85 + $11.38
    Cost = $20.48

    The total cost is $20.48.

    PTS: 1   DIF: Moderate   REF: 1.2   OBJ: Number
    LOC: N-SO1   TOP: Unit Price