



## Unit Rate/Complex Fractions

20 Questions

NAME : \_\_\_\_\_

CLASS : \_\_\_\_\_

DATE : \_\_\_\_\_

1. It took Julius  $\frac{1}{3}$  of an hour to ride his bike  $2\frac{3}{4}$  of a mile. How many miles per hour can he ride his bike?

a)  $3\frac{1}{2}$

b)  $6\frac{3}{4}$

c)  $8\frac{1}{4}$

d)  $16\frac{1}{2}$

2. Indigo has a container that contains  $18\frac{3}{4}$  cups of ice cream. How many  $\frac{1}{3}$  cups servings of ice cream are in the container?

a) 6

b) 50

c) 56

3. A cookie recipe needs  $1\frac{1}{3}$  cups of flour to make  $\frac{1}{2}$  batch of cookies. How much flour is needed to make 1 batch of cookies?

a)  $1\frac{1}{6}$

b)  $1\frac{2}{3}$

c)  $2\frac{2}{3}$

4. Peter made  $1\frac{1}{2}$  gallons of tea. She is putting  $\frac{1}{8}$  gallon of tea in each cup. How many cups can Peter fill?

a) 12

b) 16

c) 24

5. Terry bought  $2\frac{1}{2}$  dozen chocolate chip cookies. She paid \$15 for her purchase. If there were 12 cookies in each dozen, what was the cost per cookie?

a) \$0.17

b) \$0.50

c) \$0.83

d) \$1.25

6. Kendall used  $\frac{1}{2}$  of a bag of seed to plant  $\frac{1}{10}$  of her garden. How many bags will Kendall use to plant her garden?

a) 2

b) 5

c) 10

d) 20

7. Mr. Roman drove from his hometown to another city. He used  $12 \frac{1}{4}$  gallons of gas for the  $318 \frac{1}{2}$  mile trip. On average, how many miles did Mr. Roman travel per gallon of gas?

a) 26  b)  $26 \frac{1}{2}$   
 c)  $30 \frac{5}{8}$   d)  $38 \frac{4}{25}$

8. A brownie recipe requires  $\frac{2}{3}$  cup of sugar for  $\frac{1}{3}$  batch of brownies. How much sugar is need for 1 batch of brownies

a)  $\frac{2}{9}$  cup  b) 1 cup  
 c)  $1 \frac{1}{3}$  cups  d) 2 cups

9. Susan walked  $1 \frac{2}{3}$  miles in  $1 \frac{1}{4}$  hours. How many miles can Susan walk in 1 hour?

a)  $\frac{2}{5}$   b) 1  
 c)  $1 \frac{1}{3}$   d) 2

10. Mr. Adams used  $\frac{2}{3}$  lbs of nails to secure  $3 \frac{1}{3}$  yards of fence. How many yards of fence can Mr. Adams secure with 1 lb of nails?

a)  $\frac{1}{5}$   b)  $2 \frac{2}{9}$   
 c) 4  d) 5

11. Will spent \$3.75 for 3 pounds of granola. What is his unit rate in dollars per pound?

a) \$1.25 per pound  b) \$1 per pound  
 c) \$2 per pound  d) \$1.50 per pound

12.



Sargento cheese slices \$2.48 for 10 slices  
or

Velveeta Cheese slices \$3.18 for 12 slices

Find the unit price for each and choose the better deal.

a) Sargento  b) Velveeta

13. The car travels 440 miles in 8 hours. What is the unit rate?

a) 12 miles in 1 hour  b) 55 miles in 1 hour  
 c) 110 miles in 1 hour  d) 44 miles in 1 hour

14. It snowed 14 inches in 5 hours. What is the unit rate?

- a) 3 inches
- b) 1.5 inches
- c) 5 inches
- d) 2.8 inches

15. What is a complex fraction?

- a) A really hard fraction to figure out
- b) A fraction with a fraction in the numerator, denominator, or both
- c) A fraction multiplied by a decimal
- d) A fraction with an exponent

16. Sasha can mow  $\frac{3}{8}$  of an acre of grass in  $\frac{3}{4}$  an hour. How many acres of grass does Sasha mow per hour?

- a) 2 ac./hr.
- b)  $\frac{1}{2}$  ac./hr.
- c)  $\frac{9}{24}$  ac./hr.

17. Hamburger sells for 3 pounds for \$6. If Alicia buys 10 pounds of hamburger, how much will she pay?

- a) \$5
- b) \$20
- c) \$2
- d) \$180

18. A store sees 120 customers in 8 hours. What is the unit rate (in customers per hour)?

- a) 16 customers per hour
- b) 15 customers per hour
- c) 12 customers per hour
- d) 20 customers per hour

19.

$$\frac{\frac{1}{4}}{\frac{10}{9}}$$

Simplify the complex fraction shown.

- a)  $\frac{9}{40}$
- b)  $\frac{40}{9}$
- c)  $\frac{10}{36}$
- d)  $\frac{5}{18}$

20. Elijah earn \$200 for 8 hours of work. What is the unit rate (in dollars per hour)?

a) \$50 per hour

b) \$12 per hour

c) \$192 per hour

d) \$25 per hour



## Percent Review

20 Questions

NAME : \_\_\_\_\_

CLASS : \_\_\_\_\_

DATE : \_\_\_\_\_

1. Find 80 % of 80

a) 64

b) 160

c) 100

d) 10

2. How much is 10% tip of \$25?

a) \$2.50

b) \$5

c) \$20

d) \$2

3. What is 50% of 250?

a) 100

b) 125

c) 50

d) 150

4. What is 20% of \$80?

a) \$40

b) \$25

c) \$16

d) \$8

5. What percent is 42 of 558?

a) 5.16%

b) 7.53%

c) 92.47%

d) 234.36%

6.

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

68 is 118% of what number?

a) 12.24

b) 57.6

c) 80.24

d) 100

7.

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

What percent of 37 is 25?

- a) 1.48%  b) 6.76%
- c) 14.8%  d) 67.6%

8. Ms. Perry spent \$2000 to buy some new computer equipment. Of this money, \$120 was used to buy some new keyboards. What percent of the money was spent on keyboards?

- a) 40%  b) 60%
- c) 6%  d) 4%

9. The monthly budget to landscape the front of your house is \$9000. You spent 6% of the budget on flowers. How much did you spend on flowers?

- a) \$540  b) \$54
- c) \$5400  d) \$5.40

10. Ashton is saving money to buy a new bike. He needs \$120 but has only saved 60% so far. How much more money does Ashton need to buy the bike?

- a) \$72.00  b) \$60.00
- c) \$48.00

11. The regular price of a scooter is \$65.50. It is on sale for \$52.40. What is the percent decrease from the regular price to the sale price of the scooter?

- a) 35% decrease  b) 25% decrease
- c) 30% decrease  d) 20% decrease

12. Mrs. Ciampa had 27 students in her class last year and this year she had 30 students in her math class. What is the percent of change?

- a) 24% increase  b) 10% increase
- c) 11% increase  d) 50% increase

13. Lacey bought a new purse that originally cost \$25 and is on sale for \$15. Find the percent of change in the price in the purse.
- a) Decrease of 40%  b) Decrease of 10%
- c) Decrease of 30%  d) Decrease of 20%
14. Susie got a raise. She was making \$8.75 an hour. Now she is making \$9.50. What is the percent of change? Round to the nearest whole percent.
- a) 6% Increase  b) 7% Increase
- c) 8% Increase  d) 9% Increase
15. Mary lost 30 pounds. Before her diet she weighed 180 pounds. What is the percent of change?
- a) 17% Decrease  b) 18% Decrease
- c) 19% Decrease  d) 20% Decrease
16. The attendance for the basketball game was estimated to be 15,000 people but 12,500 people attended. What was the percent error?
- a) 16.67%  b) 20%
- c) 2500%  d) 80%
17. The students measured length during a science experiment, they got 12 cm. But the actual measurement was 14.25 cm. What was the percent error?
- a) 15.79%  b) 18.75%
- c) 2.25%  d) 18%
18. The deer population is estimated to be 17,600 in northern Illinois, but an actual count was 21,300. What is the percent error?
- a) 21%  b) 17.37%
- c) 17.4%  d) 21.02%
19. Jessie estimates the weight of her cat to be 8 pounds. The actual weight of the cat was 10 pounds. Find the percent error.
- a) 15%  b) 20%
- c) 25%  d) 30%

20. Zed went to the store and bought a bag of chips. He estimated there would be 350 chips in the package, but realized there were only 210 chips in that package. What was his percent error?

a) 35%

b) 67%

c) 85%

d) 92%





## Constant of Proportionality

16 Questions

NAME : \_\_\_\_\_

CLASS : \_\_\_\_\_

DATE : \_\_\_\_\_

1.  $y=kx$ . What does the  $k$  represent?

- a) constant of proportionality
- b) multiplier
- c) scale factor
- d) all of these are correct

2.

$x$	9	36	63
$y$	7	28	49

Which best describes the graph represented in this table?

- a) proportional
- b) non-proportional

3.

$x$	8	16	24	32
$y$	2	4	6	8

Is this table proportional or non-proportional?

- a) Proportional
- b) Non-Proportional

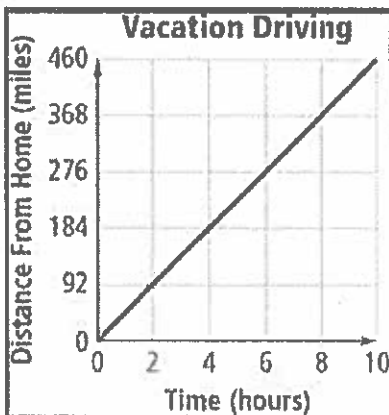
4.

$x$	8	16	24	32
$y$	2	4	6	8

What is the equation?

- a)  $y=x/4$
- b)  $y=4x$
- c)  $y= x + 4$
- d)  $y = x - 4$

5.



What is the Constant of Proportionality?

- a)  $k=46$
- b)  $k=92$
- c)  $k=0.2$
- d) not proportional

6.

$$\frac{2}{3} = \frac{3}{q}$$

Solve the proportion.

 a)  $q=2$  b)  $q=9$  c)  $q=4.5$  d)  $q=6$ 

7. Mason ran 3 miles in 20 minutes. What is his unit rate of miles per hour?

 a) 400 miles per hour b) 9 miles per hour c) 20 miles per hour d) 6.67 miles per hour

8.

Hours	Money
0	\$0
1	\$9
2	\$18
3	\$27
4	\$36

What is the constant of proportionality?

 a) \$3 b) \$4 c) \$2 d) \$9

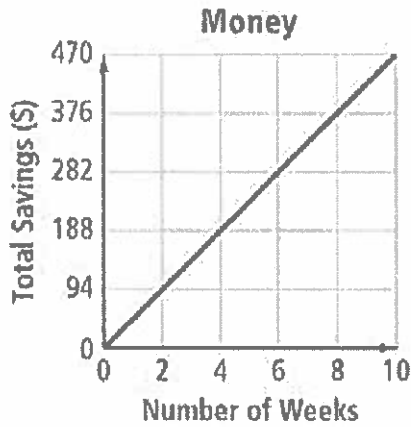
9.

Miles	Cost
100	35
200	45
300	55
400	65

Is this table proportional?

 a) Yes b) No

10.



Which of the following ordered pairs is NOT part of the graph above?

- a) (2, 94)
- b) (4, 188)
- c) (282, 6)
- d) (8, 376)

11.

What is the constant of proportionality of the relationship represented by the table above?

Amusement Park Ticket Costs

Number of Adults	1	2	3	5	10	100
Cost of Tickets (\$)	75	150	225	375	750	7,500

- a) 75
- b) 0.013
- c) 1/75
- d) None of the above

12.

Which of the tables above represents a proportional relationship?

a.

x	1	2	3	4
y	14	28	42	56

b.

x	1	2	3	4
y	8	16	32	64

c.

x	1	2	3	4
y	3	6	9	12

d.

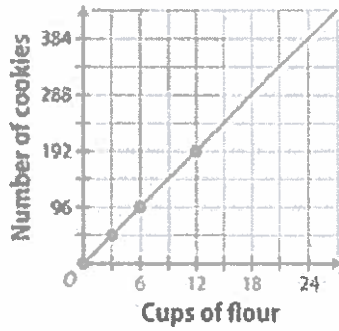
x	1	2	3	4
y	1/6	1/3	1/2	2/3

- a) a & c
- b) a, b & c
- c) a, c & d
- d) all of them

13. The constant of proportionality is also the unit rate.

- a) True
- b) False

14.



What is the constant of proportionality of the graph above?

 a) 16 b) 1/16 c) 1 d) None of the above

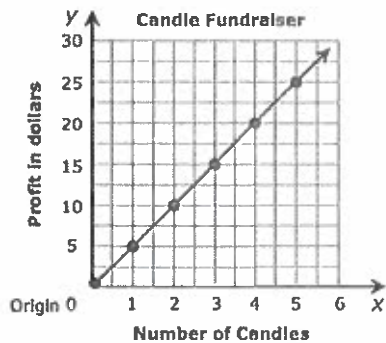
15.

$$y = 2x$$

Identify the constant of proportionality.

 a)  $k = 2x$  b)  $k = 2$  c)  $k = 4$  d) none (not proportional)

16.



Identify the constant of proportionality.

 a)  $k = 5$  b)  $k = 1/5$  c)  $k = 1$  d)  $k = 2.5$  e) none (not proportional)



5.

Multiply

$$-4\frac{5}{6} \cdot 10\frac{1}{2}$$

 a) b)

$$28\frac{3}{8}$$

$$-40\frac{5}{12}$$

 c) d)

$$-50\frac{3}{4}$$

$$-42\frac{5}{12}$$

6. A container holds 70,000 ounces of water. There is a small leak in the container. Every 96 minutes, 1.8 ounces of water leak out. Represent the total change in the amount of water in the container after 6 hours.

 a) -6.75 b) -172.8 c) -38.4 d) -8.4

7. Classify the quotient as positive, negative, zero, or undefined.

$$-15 \div (-5)$$

 a) undefined b) positive c) negative d) zero

8.

$$\frac{2}{5}$$

Write the rational number as the quotient of two integer in two different ways. Select all that apply.

 a)

$$\frac{2}{-5}$$

 b)

$$\frac{-2}{5}$$

 c)

$$\frac{2}{-5}$$

 d)

$$\frac{-2}{-5}$$

 e)

$$\frac{-2}{5}$$

9. A company loses \$64 as a result of a shipping delay. The 4 owners of the company must share the loss equally. Write an expression for the earnings per person.

- a)  $64 \div (-4)$   b)  $-4 \div (-64)$   
 c)  $4 \div (-64)$   d)  $-64 \div 4$

10. A parachutist descends 52 feet in 4 seconds. Express the rate of the parachutist's change in height as a unit rate.

- a) -13 feet per second  b) -208 feet per second  
 c) 208 feet per second  d) 13 feet per second

11. Divide and simplify.

$$\frac{5}{6} \div \left( -\frac{13}{7} \right)$$

- a)  b)

$$-\frac{35}{78}$$

$$35\frac{5}{6}$$

- c)  d)

$$-\frac{65}{30}$$

$$-35\frac{7}{8}$$

12. Simplify the expression  
 $1.75(-4) + 16$

- a) 9  b) 16  
 c) 13.75  d) 112



13.

The water level of a lake fell by  $1\frac{1}{2}$  in 4 days +  $1\frac{2}{3}$  week-long dry spell. Simplify the complex fraction below to find the average rate at which the water level changed every week.

$$\frac{-1\frac{1}{2}}{1\frac{2}{3}}$$

The water level changed by  in per week.  
(Simplify your answer. Use integers, proper fraction, or mixed number.)

 a)

$$-\frac{9}{10}$$

 b)

$$-\frac{15}{6}$$

 c)

$$-2\frac{1}{2}$$

 d)

$$-2\frac{3}{5}$$

14. Classify the quotient as positive, negative, zero, or undefined.

$$12 \div 0$$

 a) positive b) negative c) zero d) undefined

15. Simplify the expression

$$25(-1.5)(-3)$$

 a) 112.5 b) 20.5 c) 30 d) -115.2





NAME : \_\_\_\_\_

CLASS : \_\_\_\_\_

DATE : \_\_\_\_\_

## Proportional & Non-Proportional Relationships

26 Questions

1. What is a proportional relationship for a graph?

- a) A proportional relationship is when  $x$  and  $y$  form a straight line.
- b) A proportional relationship is when the slope passes through the origin.
- c) Both answer choices are correct.

2. Which best describes the graph represented in this table?

$x$	9	36	63
$y$	7	28	49

- a) proportional
- b) non-proportional

3. Which statement best describes the relationship between  $x$  and  $y$  in the table?

Dogs	Paws
2	8
4	16
6	24

- a) Proportional
- b) Not Proportional

4. Does the table represent a proportional relationship?

$x$	3	6	9	12
$y$	7	13	19	25

- a) Yes.
- b) No.

5.

$x$	$y$
4	1
5	2
9	6

Does this table represent a proportional relationship?

 a) Yes b) No

6. Which table shows a proportional relationship?

 a)
 

$x$	2	4	8	10
$y$	5	9	17	21

 b)
 

$x$	1	3	5	6
$y$	4	12	20	24

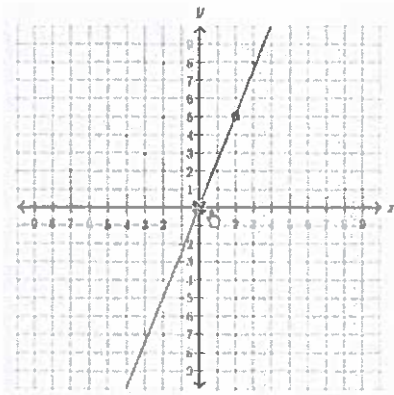
 c)
 

$x$	2	3	4	5
$y$	4	9	16	25

 d)
 

$x$	2	3	6	12
$y$	6	4	2	1

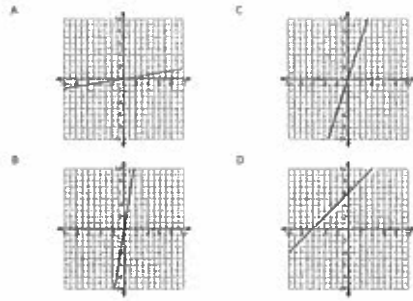
7.



Does this graph represent a proportional relationship?

 a) Yes, because the line is pretty. b) No, because the line goes through the origin. c) Yes because the line goes through the origin. d) No, because the graph is non-proportional.

8.



Which graph is non-proportional?

a) A

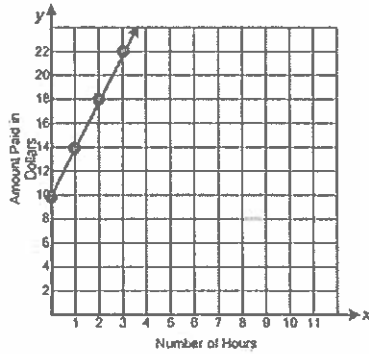
b) B

c) C

d) D

9.

Graph

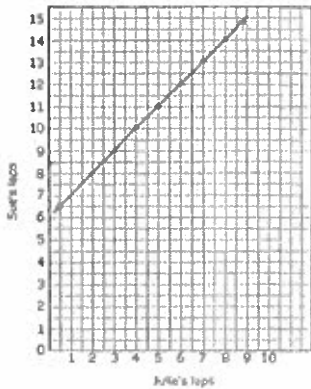


Is the graph proportional or non proportional?

a) proportional

b) non proportional

10.



Why does this graph show a non-proportional relationship?

a) Because it is proportional

b) It goes through the origin

c) It does not go through the origin

d) It is a straight line

11. Which best describes the equation?

$$y = 75x$$

a) Proportional

b) Nonproportional

12.

$$y = 2x - 5$$

Does the equation show a proportional relationship?

a) Yes

b) No

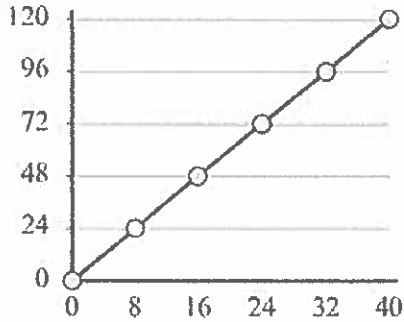
13. Proportional or Non-Proportional:

$$y = 2x + 4$$

a) Proportional

b) Non-Proportional

14.



What is the constant of proportionality?

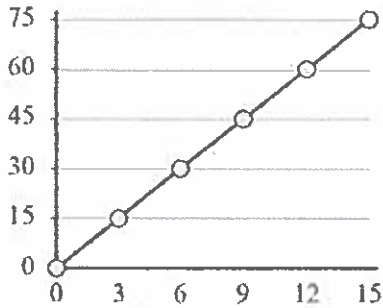
a) 3

b) 4

c) 2

d) 1

15.



What is the constant of proportionality?

a) 5

b) 1/5

c) 6

d) 1

16.

Time in minute (x)	5	9	2	6	4
Gallons of Water Used (y)	75	135	30	90	60

Every minute,      gallons of water are used.

What is the constant of proportionality?

a) 15

b) 5

c) 75

d) 25

17.

Glasses of Lemonade (x)	4	10	5	3	9
Lemons Used (y)	12	30	15	9	27

For every glass of lemonade there were      lemons used.

What is the constant of proportionality?

a) 3

b) 4

c) 2

d) 5

18.

Phone Sold (x)	7	2	6	10	4
Money Earned (y)	301	86	258	430	172

Every phone sold earns      dollars.

Based on the constant of proportionality from the table, how much money would be earned if 5 phones were sold?

a) \$43

b) \$215

c) \$210

d) \$200

19. Craig earns extra money as a lifeguard. He earns \$37 for 4 hours and \$64.75 for 7 hours. What is the constant of proportionality?

- a) \$37 per hour
- b) \$64.75 per hour
- c) \$9.25 per hour
- d) \$18.50 per hour

20. Find the unit rate: \$3.60 for 3 pounds of apples. How much does it cost for 1 pound of apples?

- a) \$1.00 per pound
- b) \$3.60 per pound
- c) \$1.20 per pound
- d) \$1.10 per pound

21.

Time (hours)	Distance (miles)
2	90
3	135
5	225
6	270

What is the constant of proportionality (in miles per hour) based on the table?

- a) 45
- b) 90
- c) 135
- d) 2

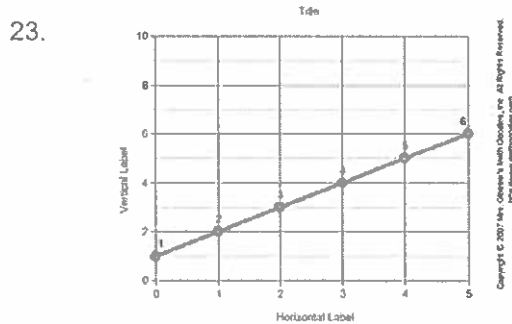
22.

Determine whether the cost of coffee is proportional to the number of pounds.

Coffee (lbs)	1	2	3	4
Cost (\$)	3	6	9	12

Is this table proportional?

- a) Yes
- b) No



Is this graph proportional?

- a) Yes
- b) No

24.

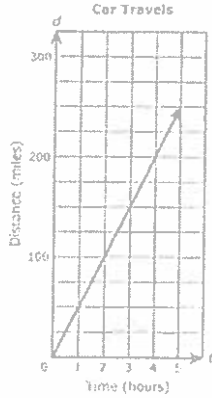
$x$	3	6	9	12
$y$	7	13	19	25

Does the table represent a proportional relationship?

a) Yes.

b) No.

25.



What is the unit rate for this graph?

a) 100

b) 25

c) 50

d) 200

26.

Hours	Money
0	\$0
1	\$9
2	\$18
3	\$27
4	\$36

What is the constant of proportionality for this table?

a) 1/9

b) 9

c) 8





## Generate Equivalent Expressions Quizizz

20 Questions

NAME : \_\_\_\_\_

CLASS : \_\_\_\_\_

DATE : \_\_\_\_\_

1. Write an equivalent expression to  $3(m + 3)$

a)  $3m + 3$

b)  $3m + 9$

c)  $m + 3$

d)  $3m - 9$

2. Write an equivalent expression for  $20n - 4m$

a)  $4(5n - 1m)$

b)  $4(n - m)$

c)  $4n - 1m$

d)  $n - m$

3. Which of the following are equivalent to  $5(2x + 3)$ . Choose all that apply.

a)  $10x + 15$

b)  $5x + 15 + 5x$

c)  $10x + 8$

4. Which of the following are equivalent to the expression  $4x - 8$

a)  $2(2x - 6)$

b)  $2(2x - 4)$

c)  $x - 8 + 3x$

5. Which expression is equivalent to  $3x + 5 + 7x + 2$ ?

a)  $10x + 7$

b)  $17x$

c)  $17$

d)  $15x + 2$

6. Which expression is equivalent to  $4(x + 6)$ ?

a)  $4x + 6$

b)  $4x + 24$

c)  $x + 24$

d)  $10x + 24$

7. Which mathematical property shown here proves that these two expressions are equivalent?

$$6(v+5v) = 6v+30v$$

a) Commutative Property  
multiplication

b) Identity Property

c) Distributive Property

d) Associative Property of addition

8. Which property of operations was used to show these expressions are equivalent?

$$17y+4+12y= 4+12y+17y$$

- a) commutative property of multiplication
- b) commutative property of addition
- c) associative property of addition

9. Generate equivalent expression for  $5(2h + 3) + 3h$

- a)  $(10h + 15) + 3h$
- b)  $13h + 15$
- c)  $15h(2h + 3)$

10. Use the associative property to write an equivalent expression for  $21p + 35q$

- a)  $(21p) + 35q$
- b)  $7(3p + 5q)$
- c)  $7(3p - 5q)$
- d)  $56(p + q)$

11. Which expression is equivalent to  $6y + 22y + y$ ?

- a)  $28y + 1$
- b)  $29y$
- c)  $22y + 7$
- d)  $29$

12. Which expression is equivalent to  $6(3y - 2y + 7)$ ?

- a)  $18y + 7$
- b)  $21y - 14y + 7$
- c)  $18y + 42$
- d)  $6y + 42$

13. Which expression is equivalent to  $12(5 - 4x)$ ?

- a)  $12x$
- b)  $17 - 16x$
- c)  $60 - 48x$
- d)  $60 - 4x$

14. Which answer choice is equivalent to:

$$3(2x+8)$$

*Select all that apply.*

- a)  $3x+20+2x+4+x$
- b)  $6x+24$
- c)  $6x+8$
- d)  $5x+11$
- e)  $6(x+4)$

15. Which answer choice is equivalent to:

$$12x-16$$

Select all that apply.

a)  $3(4x+5)$

b)  $3(4x-6)$

c)  $4(4x-3)$

d)  $4(3x-4)$

e)  $8x-(4\cdot 4)+4x$

16. Which answer choice is equivalent to:

$$18x-9$$

Select all that apply

a)  $18(x - \frac{1}{2})$

b)  $9(2x+1)$

c)  $9(2x-1)$

d)  $6(3x + \frac{2}{3})$

e)  $3(3x-3)$

17. Which answer choice is equivalent to:

$$4(2x-5)+6x$$

Select all that apply.

a)  $2(7x-10)$

b)  $14x-20$

c)  $20-14x$

d)  $14x-5$

e)  $8x-20+6x$

18. Which answer choice is equivalent to:

$$5x+3(x-6)$$

Select all that apply.

a)  $8x-18$

b)  $5x+3x-18$

c)  $18+8x$

d)  $\frac{1}{2}(16x-36)$

e)  $18-8x$

19. Which answer choice is equivalent to:

$$2x+4x+6(x-3)+4$$

Select all that apply.

a)  $12x-14$

b)  $14x-13$

c)  $2(6x-7)$

d)  $\frac{1}{2}(24x-28)$

e)  $14-13x$

20. What is the simplified form of this expression

$$3x+4+5x+3$$

a)  $15x$

b)  $8x+7$

c)  $7x+8$