

Md Islam

TKH Vestibule Data Science in 2021

Module 7

Due date: August 20, 2021

SECTION 1: RATION & PROPORTION (Part I)

Lesson 2: Practice 2, Section A: q1-5, Section B: q11-12

PRACTICE 2

A. For each situation, identify and label the base, part, and rate.

1. Victor owes his uncle \$1000. Recently, he gave his uncle \$200. The payment was 20% of the money he owes. $B=800, P=200, R=20\%$
2. On a test with 80 problems, Sophie got 72 problems right. In other words, she answered 90% of the problems correctly. $B=80, P=72, R=90\%$
3. The Kang family made a down payment of \$2,740 on a new car. The down payment was 20% of the purchase price of \$13,700. $B=913700, P=2740, R=20\%$
4. Zoe's take-home pay each month is \$2000. She spends \$500 on rent each month, which is 25% of her take-home pay. $B=8000, P=500, R=25\%$
5. This year, Rafael has 60 regular customers, which is 150% of the 40 regular customers he had last year. $B=60, P=40, R=150\%$

B. Choose the one best answer to each question. Use the proportion $\frac{\text{part}}{\text{base}} = \frac{\text{rate}}{100}$ to solve each problem.

Questions 11 and 12 refer to the following information.

A local newspaper printed the following high school basketball standings:

Team	Wins	Losses
Fairfax	9	3
Hamilton	8	4
Bravo	6	6
Mountain View	4	8
Lincoln	3	9

11. Which of the following expressions could be used to find what percent of its total games Fairfax has won?
A. $\frac{9 \times 100}{12}$
B. $\frac{3 \times 100}{12}$
C. $\frac{12 \times 100}{9}$
D. $\frac{6 \times 100}{12}$
12. What percent of its games did Bravo win?
A. 100%
B. 75%
C. 60%
D. 50%
13. A jacket with a price tag of \$128 is on a rack with the following sign:

All Items:
25% off marked price
Discount taken at register

By how much will the price be reduced when the jacket is taken to the register?
A. \$4
B. \$25
C. \$32
D. \$96

Lesson 3: Practice 3.1, Section A: q1-5, Section B: q18, 19 & 21, Practice 3.2, Section A: q1-5, Section B: q20-21

PRACTICE 3.1

A. Solve. You MAY use a calculator for questions 9 through 16.

1. What is 20% of \$25? $\Rightarrow 45$
2. Find 90% of 200. $\Rightarrow 180$
3. What is 35% of 400? $\Rightarrow 140$
4. What percent is 19 out of 20? $\Rightarrow 95\%$
5. 42 is what percent of 168? $\Rightarrow 25\%$
6. What percent is \$18 out of \$600?
7. Find $33\frac{1}{3}\%$ of 51. (Hint: $33\frac{1}{3}\% = \frac{1}{3}$)
8. What is 125% of \$48?
9. 240 is what percent of 120?
10. What percent is 3 out of 60?
11. \$52 is what percent of \$650?
12. Find $8\frac{1}{2}\%$ of \$46.
13. \$0.65 is what percent of \$10.00?
14. Find 28% of \$1300.
15. What percent is 2.5 out of 4?
16. Find $66\frac{2}{3}\%$ of 108. (Hint: $66\frac{2}{3}\% = \frac{2}{3}$)

B. Choose the one best answer to each question. You MAY use your calculator.

17. Pat called 120 customers to offer a software upgrade. Of those he called, 72 purchased the upgrade. What percent agreed to the purchase?

- A. 40%
- B. 48%
- C. 60%
- D. $66\frac{2}{3}\%$

18. Douglas received a 6% raise. If his old monthly salary was \$2,250, what is his monthly salary now? (Hint: Find the amount of the raise. Then add the raise to the previous monthly salary.)

- A. \$2,256
- B. \$2,385
- C. \$3,600
- D. \$13,500

19. At a restaurant, Levy's total bill is \$46. If he wants to tip 15%, how much should he leave as a tip?

- A. \$690.00
- B. \$31.00
- C. \$15.00
- D. \$6.90

20. The following advertisement for sporting goods appeared in the newspaper. What percent of the original price is the sale price?

<p>Little League Package Magnum bat, tote bag, and youth cleats Only \$45.50 Originally \$65</p>
--

- A. 20%
- B. 31%
- C. 44%
- D. 70%

21. Lydia pays \$3 sales tax on a \$50 purchase. Which of the following expressions could be used to find the sales tax rate in her state?

- A. $\frac{\$3 \times 100}{\$50}$
- B. $\frac{\$3 \times \$50}{100}$
- C. $\$3 \times \50×100
- D. $\$3 \div \50

STUDY ADVICE

Remember as you study to pay particular attention to words in bold and the Key Ideas on each page on the left. Also, study each worked example to see how to apply the concepts in your own practice.

PRACTICE 3.2

A. Find the missing element in each set. You MAY NOT use a calculator.

1. \$35 is 20% of what amount? $\rightarrow 175$
2. 5% of what number is 14? $\rightarrow 280$
3. 3.2 is 50% of what number? $\rightarrow 6.4$
4. \$170 is 85% of what amount? $\rightarrow 200$
5. 24 is 80% of what number? $\rightarrow 30$
6. \$105 is 125% of what amount?
7. 190 is 95% of what number?
8. What number is 15% of 60?
9. 90% of \$15 is what number?
10. \$42 is what percent of \$168?
11. \$150 is 200% of what amount?
12. 15% of \$62 is what amount?
13. 9 is 1% of what number?
14. What percent is 126 of 140?
15. 65% of \$1200 is what amount?
16. 5% of an amount is \$156. What is the amount?
17. $2\frac{1}{2}\%$ of a number is 100. What is the number?
18. What percent is \$15.60 of \$156.00?

B. Choose the one best answer to each question. You MAY use your calculator.

19. Kevin's total payroll deductions are 30% of his earnings. If his deductions add up to \$369 for a two-week period, how much were his earnings for the period?
 - A. \$110.70
 - B. \$123.00
 - C. \$1,230.00
 - D. \$11,070.00
20. A city council established the following budget to improve public transportation.

Project Budget	
Salaries	50%
Office lease	35%
Equipment	6%
Supplies	2%
Miscellaneous	7%

If \$72,000 is allotted for equipment, what is the total budget for the project?

 - A. \$432,000
 - B. \$940,000
 - C. \$1,200,000
 - D. \$120,000,000
21. Jack earns a 5% commission on each sale. If he is paid a \$160 commission, which of the following expressions could be used to find the amount of the sale?
 - A. $\frac{5 \times 100}{160}$
 - B. $\frac{160 \times 100}{5}$
 - C. $\frac{5 \times 160}{100}$
 - D. $5 \times 100 \times 1.60$
22. American Loan Company mailed 3600 customers an application for a new credit card. Only 20% of the customers returned the application. How many customers returned the application?
 - A. 72
 - B. 180
 - C. 720
 - D. 180,000

Lesson 6: Practice 6, Section A: q1-5, Section B: q14-15

PRACTICE 6

- A. Solve as directed. If necessary, round your answer to the nearest percent. You MAY use your calculator for questions 7 through 10.
1. Find the percent of increase from 2000 to 3000. $\Rightarrow 50\%$
 2. Find the percent of decrease from \$2.00 to \$1.25. $\Rightarrow 37.5\%$
 3. What is the percent of increase from 30 to 90? $\Rightarrow 200\%$
 4. Find the percent of decrease from 20 to 11. $\Rightarrow 45\%$
 5. Find the percent of increase from \$25 to \$30. $\Rightarrow 20\%$
 6. What is the percent of decrease from 500 to 340?
 7. Find the percent of increase from \$1.89 to \$2.29.
 8. What is the percent of decrease from 21 to 3?
 9. Find the percent of increase from 65 to 338.
 10. What is the percent of decrease from \$1550 to \$1025?

- B. Choose the one best answer to each question. You MAY use your calculator.

11. Justin recently moved from a part-time to a full-time job. Because of the change, his weekly pay increased from \$280 to \$448. To the nearest percent, by what percent did his income increase?
 - A. 38%
 - B. 60%
 - C. 168%
 - D. 267%
12. David bought a computer game on sale for \$36. The game was originally \$48. What was the percent of decrease in the game's price?
 - A. 12%
 - B. 25%
 - C. $33\frac{1}{3}\%$
 - D. 75%
13. The Utleys' rent increased from \$600 to \$636 per month. By what percent did the rent increase?
 - A. 4%
 - B. 5%
 - C. 6%
 - D. 7%

Questions 14 and 15 refer to the following information.

Marc sells computer equipment. He buys printers at wholesale and sells them at retail price. Customers who join his discount club pay the member's price.

Printer Pricing Chart			
Model Number	Wholesale Price	Retail Price	Member's Price
L310	\$63.00	\$141.75	\$92.15
L1430	\$86.00	\$150.50	\$105.35

14. What is the percent of increase from wholesale to retail price of the L310 model?
 - A. 56%
 - B. 78%
 - C. 125%
 - D. 225%
15. For the L1430 model, what is the percent of decrease from retail price to member's price?
 - A. 26%
 - B. 30%
 - C. 43%
 - D. 53%

STUDY ADVICE

Here's a quick rule to remember: When determining percent of change—either increase or decrease—the denominator is always the original value. Study these examples to see percent of change in action.

Need Extra Practice? Read and complete pages 308-311

RATIO, PROPORTION, AND PERCENT PRACTICE QUESTIONS

Directions: You MAY use your calculator.

1. From a total yearly budget of \$360,000, the Kimball Foundation spends \$30,000 on leasing office space. What is the ratio of dollars spent on office space to dollars spent on other costs?
- A. 12:1
B. 11:1
C. 1:11
D. 1:12
2. A worker can assemble 5 motors in 2 hours. Which of the expressions below could be used to find how long it would take the worker to assemble 50 motors?
- A. $2 \times \frac{50}{5}$
B. $\frac{5 \times 50}{2}$
C. $\frac{5}{2 \times 50}$
D. $2 \times 5 \times 50$
3. Frank owns a discount music store. The table below shows how much Frank pays for certain merchandise items.
- | Item | Wholesale Price |
|---------|-----------------|
| CDs | \$7.20 |
| Posters | \$5.60 |
- To find his selling price, Frank increases each price by 35%. What is the selling price of a poster?
- A. \$9.72
B. \$7.56
C. \$5.95
D. \$1.96
4. Neva's car is now worth \$12,000. This is 60% of what she paid for it. How much did she pay for the car?
- A. \$7,200
B. \$18,000
C. \$19,200
D. \$20,000
5. At a shop, the ratio of union to non-union workers is 7 to 3. If there are 18 nonunion workers at the shop, how many union workers are there?
- A. 21
B. 25
C. 42
D. 126
6. Camilla earned \$954 in commission on \$15,900 in sales. What is her rate of commission?
- A. 6%
B. 9%
C. $16\frac{2}{3}\%$
D. 60%
7. John spent the following amounts of time building a workbench:
- | | |
|---------------------------|----------------------|
| drawing the plans: | 2 hours |
| cutting the wood: | $1\frac{1}{2}$ hours |
| assembling the workbench: | 2 hours |
| sanding and sealing: | $3\frac{1}{2}$ hours |
- What is the ratio of time spent cutting wood to total time spent on the project?
- A. 1:9
B. 1:6
C. 1:5
D. 3:7

Questions 8 and 9 refer to the following information.

Ford County Farmland Usage Total Acreage: 40,000	
Usage	Number of Acres
Dairy	22,000
Nursery/greenhouse	3,600
Vegetables/fruits	5,200
Grains	9,200

8. What percent of Ford County farmland is used for the growing of grains, vegetables, or fruits?

- A. 23% *13%*
B. 36%
C. 57%
D. 64%

9. One dairy farmer in Ford County is considering selling her farm to developers, who will convert it from a dairy farm to a resort. If this happens, the amount of farmland devoted to dairy in Ford County will decrease by 20%. How many total acres of farmland will Ford County then have if the dairy farmer decides to sell?

- A. 35,600
B. 32,000
C. 17,600
D. 4,400

10. A serving of peanut butter contains 3 grams of saturated fat and 13 grams of unsaturated fat. This amount of fat is 25% of the recommended amount of fat in a 2000-calorie diet. What is the ratio of grams of saturated fat to total fat in a serving of peanut butter?

- A. $\frac{3}{16}$
B. $\frac{3}{13}$
C. $\frac{13}{16}$
D. $\frac{16}{3}$

11. A drawing of a company logo is 4 inches wide and 5 inches long. If the drawing is enlarged so that it is 12.5 inches long, and the original proportions remain unchanged, how many inches wide will the enlarged drawing be?

- A. 7.5
B. 10
C. 15.625
D. 20

For questions 12 and 13, mark your answers in the grids below.

12. A local hospital currently has 184 male patients. If the ratio of male to female patients is 4:3, how many female patients are there in the hospital?

13. A newspaper advertisement contains the following information.

Busy Body Fitness Center Inventory Reduction Blowout! All sale prices are 20% off original price!	
Equipment	Sale Price
Treadmill	\$1512
Upright bike	\$720
Home gym	\$3148

In dollars, what was the original price of the upright bike?

12. *138*

0	0	0
0	0	0
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

13. *3600*

0	0	0
0	0	0
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

- 5/14 f8*
14. The Tigers' ratio of wins to losses is 5 to 4. If the team continues winning at the same rate, how many games will the Tigers win in a 72-game season?

A. 20
B. 40
C. 37
D. 52

15. A television station called 400 adults and asked the following question: "Do you approve of the governor's new education program?" The table below shows the results of the survey:

Response	Percent
Undecided	16%
Yes	32%
No	52%

Of the people called, how many did not answer "no"?

A. 64
B. 128
C. 192
D. 208

16. The price of a carton of computer paper decreased from \$25 to \$20. What was the percent decrease in the price?

A. 80%
B. 50%
C. 20%
D. 5%

17. Six months ago, Sandra had 55 regular customers. Now, she has 220% as many regular customers as she had six months ago. How many regular customers does Sandra have now?

A. 121
B. 90
C. 66
D. 25

18. If 1 gram of fat equals 9 calories, what percent of the calories in a Munchies roast beef sandwich come from fat?

Munchies Sandwich Facts		
Sandwich	Fat (grams)	Calories
Roast Beef	6	300
Club Classic	5	335

A. 2%
B. 3%
C. 6%
D. 18%

19. For every \$8 in their budget, the Parks spend \$3 on food. If their weekly budget is \$704, how much do they spend on food each week?

A. \$88
B. \$192
C. \$235
D. \$264

20. Suddeth Travel estimates that 80% of its employees have more than 12 days of unused sick leave. If 140 employees have more than 12 days of unused sick leave, how many employees work at the agency?

A. 112
B. 164
C. 175
D. 700

21. The Gladstone Theater has 900 seats. At a recent show, the ratio of tickets sold to tickets unsold was 11 to 1. How many tickets were sold?

A. 75
B. 810
C. 818
D. 825

22. Matthew put \$2200 in a savings account for one year and six months. If he earns simple interest at an annual rate of 8%, how much will he have in the account at the end of the time period?

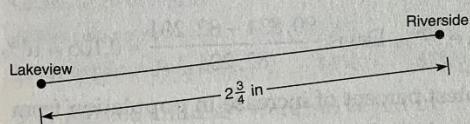
A. \$2212
B. \$2376
C. \$2464
D. \$2640

23. A television set that is regularly priced at \$410 is on sale for 20% off. What is the sale price of the television set?

A. \$82
B. \$328
C. \$390
D. \$492

24. On a county map shown below, the map scale reads, "0.5 in = 60 mi."

What is the actual distance in miles between Lakeview and Riverside?



A. 23
B. 165
C. 300
D. 330

STUDY ADVICE

Congratulations! You've done a ton of work learning the "number and quantity" skills tested by the TASC. While 15% of the questions on the TASC Mathematics Test directly test number and quantity skills, you will also need these skills to work algebra, geometry, and statistics problems. Keep periodically reviewing the first three chapters of this unit as you work through the remaining chapters.

Question 25 refers to the following information.

Leo's Bookstore kept track of the number of customers who visited the store over a 3-day period and the number of those who made a purchase.

Day	Number of Customers	Number of Customers Who Made a Purchase
Friday	112	83
Saturday	138	45
Sunday	140	91

25. Which of the following could be used to find what percent of Sunday's customers did not make a purchase?

A. $\frac{91}{140}$
B. $\frac{91}{140} \times 100$
C. $\frac{(140 - 91)}{140} \times 100$
D. $\frac{(140 - 91)}{91} \times 100$

For questions 26 and 27, mark your answers in the grids below.

26. A school admits 9 out of every 14 who apply. At that rate, how many students will be admitted if 420 apply?

27. In a 40-hour workweek, Marcie spends 15 hours answering telephones. What is the ratio of hours spent answering telephones to hours doing other types of work? (Record your answer as a fraction.)

26.

2	7	0
0	0	0
0	0	0
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

27.

9	1	5
0	0	0
0	0	0
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

10

SECTION 2: Algebraic Expressions

Lesson 1: Practice 1.1, Section A: q1-10, B, q21, Practice 1.2, Section A: q1-5, C q23

PRACTICE 1.1

- A. Write an algebraic expression for each description. Use the variables x and y .
1. a number decreased by 7 = $x - 7$
 2. the product of 3 and the square of a number increased by that number = $3x^2 + 3$
 3. the product of 8 and a number less than 10 = $8x - 10$
 4. the difference of -3 multiplied by a number and the product of 2 and another number = $3x - 2y$
 5. 5 less than the quotient of 10 and a number = $\frac{10}{x} - 5$
 6. the sum of -8 and the product of 7 and a number = $-8 + 7x$
 7. the sum of 16 times a number and the number decreased by 3 times another number = $x^2 + xy$
 8. a number squared plus the number raised to the fourth power = $x^2 + x^4$
 9. the square of a number plus the quotient of 4 and 7 = $x^2 + \frac{9}{x}$
 10. 6 subtracted from the sum of 15 and the square root of a number = $(15 + y^2) - 6$
 11. a number less than the sum of another number and 13
 12. the square of the sum of a number and 6
 13. 17 less the sum of 2 times a number plus another number
 14. a number increased by the quotient of 24 and the number
 15. the difference of the product of 2 and a number and 15
 16. 4 times the difference of two different numbers
 17. 5 multiplied by the difference of a number squared and 3
 18. the product of a number and the difference of 11 and the square root of 100

B. Choose the one best answer to each question.

19. A minor-league baseball team is giving a local charity the sum of \$1500 and \$0.50 for each ticket over 2000 sold for one game. Let x represent the number of tickets sold. If the team sells more than 2000 tickets, which of the following expressions could be used to find the amount of the donation?
- \$1500 + \$0.50x
 - \$1500 + \$0.50(2000 - x)
 - \$1500 + \$0.50(x - 2000)
 - \$1500(2000 - x)(0.50)

20. The sum of 3 times a number and 4 times a second number is divided by the sum of 2 and a third number. Which of the following expressions represents this series of operations?
- $(3x + 4y) \div (2 + z)$
 - $3x + 4y \div (2 + z)$
 - $3x + 4y + 2 + z$
 - $(3x + 4y) + 2z$

Question 21 refers to the following information.

Appliance City employees earn an hourly wage plus commission. Wage options are shown below.

Option	Hourly Wage	Commission on Sales
A	\$7.50	1%
B	\$6.00	3%

21. Chandra is paid under Option B. If h represents the number of hours worked and s represents Chandra's total sales, which of the following expressions could be used to find her weekly pay?

- $6 + h + 0.03s$
- $6h + 0.03s$
- $6s + 0.03h$
- $0.03(h)(s)$

PRACTICE 1.2

A. Simplify.

1. $5 + x^2 - 3 + 3x = x^2 + 3x + 2$
2. $2y + 5 + 17y + 8 = 19y + 13$
3. $3x - 6(x - 9) = -3x + 54$
4. $6x^3 + 4 + 2x^2(15) + x^2 = 6x^3 + 51x^2 + 4$
5. $\cancel{4(y + 8)} + 3(y - 6) = \cancel{8y} + 14$
6. $5 - (x - 3) + 4x$
7. $16x + 6(x - 2)$
8. $5y^2 + 4 - 3y^2 + 5 + y$
9. $-3(x + 3) - 2(x + 4)$
10. $5x - (x + 4) - 3$

B. Evaluate each expression as directed.

11. Find the value of $6(x + 2) + 7$ when $x = 2$.
12. Find the value of $3x^2 + 3(x + 4)$ when $x = 3$.
13. Find the value of $\frac{(x + y)^2}{2} - 10$ when $x = 2$ and $y = 4$.
14. Find the value of $y^2 + 16 - (y - 5)^2$ when $y = 3$.
15. Find the value of $8x + 9y - (2x + y)$ when $x = 4$ and $y = 6$.
16. Find the value of $x^2 + 3y - 4 + 2(x - z)$ when $x = 7$, $y = 5$, and $z = -3$.
17. Find the value of $(14 - x)^2 + 20\sqrt{x}$ when $x = 9$.
18. Find the value of $\frac{3(2x - y)}{3} + 6(y - 5)$ when $x = -2$ and $y = 3$.
19. Find the value of $x^2 - (x^3 + 3)$ when $x = -2$.
20. Find the value of $30x + 2 + 2y^2 - 3(x - 2)^2$ when $x = 1$ and $y = 4$.

C. Choose the one best answer to each question.

21. Which of the following expressions is equal to $3x^2 + 3(x - 3) + x + 10$?

- A. $x^2 + 9x + 1$
- B. $3x^2 + 4x + 19$
- C. $3x^2 - 2x + 19$
- D. $3x^2 + 4x + 1$

22. Given the expression $4x^2 - 3(y + 6)$, which of the following values for x and y will result in a value of -11 ?

- A. $x = 2, y = 3$
- B. $x = -2, y = 4$
- C. $x = -1, y = 2$
- D. $x = 1, y = 0$

Question 23 refers to the following information.

Temperature Conversion Formulas

To convert Fahrenheit (F) to Celsius (C)	$C = \frac{5}{9}(F - 32)$
To convert Celsius (C) to Fahrenheit (F)	$F = \frac{9}{5}C + 32$

23. If the temperature is 68° Fahrenheit, what is the temperature in Celsius?

- A. 20°
- B. 36°
- C. 154.4°
- D. 180°

STUDY ADVICE

Algebraic expressions are the foundation for much of the TASC Mathematics Test. In the next chapter, you'll take these skills one step further by working with expressions in word problems, equations, and functions. So, make sure you understand the material so far before moving on.

Lesson 3, Practice 3, Section A q1-10, Section B: q16-24, Section C: q31-32

PRACTICE 3

A. Identify whether each of the following is a monomial, binomial, or trinomial.

1. $25a$ - monomial
2. $2xy^2z$ - mono
3. $x - 4$ - binomial
4. $x^3 + y - 1$ - binomial
5. $7y - 1$ - binomial
6. $2x^4 + 3x + 4$ - trinomial
7. $\frac{x}{3}$ - mono
8. y^2 - mono
10. $x^2 + x^2$ - binomial ✓
11. $x^2 + 14x + 3$
12. $x^2y + x^2 + y$
13. $g + h$
14. $\sqrt{49}$
15. $3x^2 - 5$

B. For each polynomial, identify the terms. Remember that a coefficient can be positive or negative.

16. $3x^4 - 2x^2 + 3$
17. $12a^2bc$
18. $3g - 4h$
19. $x^2 + y - \frac{1}{2}c$
20. $-4a - 3b^2 + c$
21. $\frac{25}{e}$
22. $4x^2 + 3x - 7$
23. $\frac{3x}{8} - e$
24. $\sqrt{25} - e$ ✓
25. $\frac{x^2}{9}$
26. $49x^2y^2z^2$
27. $18y^2 - 4y^2 + 8$
28. $3h - 4$
29. $x^2 - x + y^2 - 2$
30. $ab + ab^2 + b^2 - 4$

Abbreviation
Coefficient = Co
Variable = ✓
Exponent (power) = ex
Constant = e

C. Choose the one best answer to each question.

31. What is the sum of the exponents in the expression $4x^3 + 3x^2 + 5$?

- A. 3
B. 5
C. 12
D. 17

32. What is the sum of the coefficients in the expression $a - 3b - c + 2d$?

- A. -3
B. -1
C. 2
D. 3

STUDY ADVICE

If you're having trouble sticking to your study schedule, consider finding a study partner—someone else who is studying for anything (the TASC, the GED® test, or any other exam). The two of you can remind each other to stick to your study schedules, encourage each other, and even have study sessions together.

Lesson 4, Practice 4, Section A: q1-10

PRACTICE 4

A. For each pair of terms, indicate if they are like terms or unlike terms.

1. $4x^3, x^3$ like terms

11. $ab, 8ab$ _____ terms

2. $3x, x$ like terms

12. $3y, 3y^2$ _____ terms

3. b, b^2 unlike terms

13. $14g, \frac{1}{3}g$ _____ terms

4. $-2x, 7y$ unlike terms

14. $12x^2, x^2$ _____ terms

5. $-2x, 7x$ like terms

15. a, ab^2 _____ terms

6. $4a, 4$ unlike terms

16. $15x^2, -x^2$ _____ terms

7. g^2, g^2hi like terms

17. $10y, 11yz$ _____ terms

8. $2x^2y, 8x^2y$ like terms

18. $x^2, \frac{x^2}{2}$ _____ terms

9. $-5m, -5m^2$ unlike terms

19. $g, -g^2$ _____ terms

✓ 10. x^2y, xy^2 unlike terms

20. $\frac{x}{8}, x^2$ _____ terms

B. Simplify each expression by combining like terms.

21. $3x^2y + 4x^2y$

29. $9y + y - y^2 - y$

22. $3b + b$

30. $x^2 - 8x^2 + y - 3$

23. $a - 7a + 3$

31. $11y + 11y - 7$

24. $14ab + ab^2 + 2ab + 3$

32. $9x^2y - 3x^2y + 4y^2 - 21 + y^2 - 2$

25. $x^2 - 3x^2 + 7$

33. $8x^2 - 4x + 7 + 4x^3 - x^2 + 7x - 2$

26. $ab + 2ab + ab$

34. $-3x^2 + 6x - 2x^2 - 10x + 5$

27. $7g + 7gh + 7g + 7gh$

35. $9x^2 - 3x^3 + x - 2x^2$

28. $g^2 + h^2 - 4g^2h^2 + g^2 + h^2 - 4$

C. Choose the one best answer to each question.

36. What is the simplified form of the expression $3a^2b + 4ab + 3a^2b + 5ab$?

37. When simplified, how many terms are in the polynomial $j^2 + k^3 - 2j^3 + 5k^3 - 2j^2$?

A. $6a^3b^2 + 8a^3b^2$

A. 2

B. $6a^2b + 9ab$

B. 3

C. $6a^2b + 8ab$

C. 4

D. $15a^6 + b^4$

D. 5

D. None of the above

Lesson 5, Practice 5, Section A: q1-5

PRACTICE 5.1

Example 4: Subtract $(x^2 + 2x + 3) - (4x^2 - x + 6)$.

1. Distribute the negative sign to everything in the second set of parentheses by reversing the sign of each term:

$$-4x^2 + x - 6$$

2. Drop the parentheses and combine like terms:

$$\begin{aligned}x^2 + 2x + 3 - 4x^2 + x - 6 \\x^2 - 4x^2 + 2x + x + 3 - 6 \\-3x^2 + 3x - 3\end{aligned}$$

A. Add the following polynomials.

1. $(3x + 4) + (2x + 2) = 5x + 6$

6. $(6a + 6) + (-5a - 5) = a + 1$

2. $(17y - y + 3) + (4y + 3y + 3) = 23y + 6$

7. $(-8g^2 + 7g + 6) + (8g^2 - 7g - 5) = g + 1$

3. $(5x^2 - 3x - 4) + (3x^2 - 2x + 6) = 8x^2 - 5x + 2$

8. $(2x^2 + 5x) + (2x^2 + 4x + 7x - 9) = 6x^2 + 13x - 9$

4. $(-a^2 + 2a) + (16a^2 + 6a) = 15a^2 + 8a$

9. $(13y + 4y + 4) + (7y - 7) = 24y - 3$

5. $(9x^2 - 3x - 2) + (2x^2 + 5x + 5) = 11x^2 + 2x + 3$

10. $(-a^2 - a^2 - a - 4) + (-a^2 - a^2 - a - 5) = -4a^2 - 2a - 9$

B. Subtract the following polynomials.

11. $(3y - 4) - (2y - 2) = y - 2$

17. $(-g + g - 1) - (-g - g - 2) = 2g + 1$

12. $(x + 16) - (4x + 3) = -3x + 13$

18. $(17a^2 - 4a - 4) - (16a^2 + 6a - 6) = a^2 - 10a + 2$

13. $(2a + 1) - (-a - 1) = 3a + 2$

19. $(7b^2 + b - 8) - (7b^2 + b + 8) = -16$

14. $(5x^2 + 2x + 4) - (2x^2 + x + 2) = 3x^2 + x + 2$

20. $(21x^2 + 3x^2 - 2x - 4 - 1) - (3x^2 + x^2 + x + 2x - 5 - 1) = 16x^2 - 4x + 5$

15. $(7y + 5y + 5) - (2y - 2) = 10y + 7$

16. $(9x^2 + 4x + 5x + 4) - (7x^2 + 6x - 9) = 2x^2 - 2x + 13$

C. Choose the one best answer to each question.

21. What is the sum of the polynomials

$$(2xy + 3xy^2 - 4x^2y) + (5x^2y - 3xy^2 + 2xy)?$$

A. $x^2y + 4xy$

B. $4xy + 3x + y$

C. $7x - 2y$

D. $7x^2y - 2xy$

22. Which of the following equals

$$(5x^2 - 2x + 1) - (3x^2 - 3x - 2)?$$

A. $x - 5x - 1$

B. $2x^2 - x + 3$

C. $2x^2 + x + 3$

D. $2x^2 - 5x + 3$

STUDY ADVICE

Look back over your work. If you understood how to add or subtract polynomials, but you made small or careless errors in doing so, give yourself a pat on the back! You've learned the concept, and now you know to watch for small math errors.

Lesson 6, Practice 6, Section A: q1-4, Section B: q9-12, Section C: q17-18, Section D: q25

PRACTICE 6

A. Multiply the monomials.

1. $(6x)(5x) = 30x^2$
2. $(2xy)(3y) = 6xy^2$
3. $(7abc)(4bc) = 28ab^2c^2$
4. $(12y)(z) = 12yz$

5. $(a)(9bc) = 9abc$
6. $(5xyz)(2xy^2z^4) = 10x^2y^3z^5$
7. $(4ab)(bc^2) = 4abc^3$
8. $(17f^2gh^3)(2fh^4) = 34f^3gh^7$

B. Multiply the binomials by the monomials.

9. $3z^2(6xy + 4z) = 18xyz^2 + 12z^3$
10. $6x(7x - 6z) = 42x^2 - 36xz$
11. $-5ab(3b + 11c) = -15abc^2 - 55abc$
12. $-3f^3(6h - 8fh^2) = -18f^4h + 24f^5h^3$

13. $10z(7x^2 - 5z) = 70x^2z - 50z^2$
14. $-z(-z - 6xy) = z^2 + 6xyz$
15. $8b(9ab + 8a) = 72ab^2 + 64b$
16. $-9(-2x^4 + 3xy^2) = 18x^4 - 27xy^2$

C. Multiply the binomials by using FOIL. Remember to complete by combining like terms wherever possible.

17. $(x + 5)(x - 6) = x^2 - x - 30$
18. $(x + y)(x + y) = x^2 + 2xy + y^2$
19. $(z + 9)(z - 9) = z^2 - 81$
20. $(yz^2 + x)(yz^2 - 3x) = y^2z^4 - 3xyz^2$

21. $(3x + 3)(3x + 5) = 9x^2 + 18x + 15$
22. $(x + y)(x - y) = x^2 - y^2$
23. $(y^2 - 6)(y^4 + 10) = y^6 + 10y^2 - 6y^4 - 60$
24. $(ab + 3)(ab - 4) = a^2b^2 - ab^2 - 12ab - 12$

D. Choose the one best answer to each question.

25. Which of the following expressions is equal to $(4a^3b^2)(3a^2c)$?

- A. $12a^5b^2c$
B. $7a^5b^2c$
C. $12a^6bc$
D. $7a^6b^2c$

27. Which of the following expressions is equal to $(4ab + 2)(3ab - 7)$?

- A. $7a^2b^2 + 22ab + 5$
B. $12a^2b^2 - 22ab - 14$
C. $12a^2b^2 + 22ab + 14$
D. $7a^2b^2 - 22ab - 5$

26. Martha has $2pc^2$ board games, and John has $6p^2c$ board games. Which of the following expressions represents the product of the number of board games that Martha and John have?

- A. $8p^3c^3$
B. $8p^2c^2$
C. $12p^2c^2$
D. $12p^3c^3$

STUDY ADVICE

How's your stress level? As you're working through difficult content, it's especially important to manage your stress. Stay on a regular sleep schedule, exercise, and eat right. Whenever you're stressing out, step away. Remember: You can do this. Just don't let stress get in your way.

Lesson 7, Practice 7, Section A: q 1-5, Section B: q13-17,

PRACTICE 7

- A. To simplify, divide each polynomial by a number. (You may need to factor the numerator and/or denominator to find the common term.)

1. $\frac{2y+30}{2} = y+15$

7. $\frac{5x+10y}{5}$

2. $\frac{7x+21}{7} = 3x+3$

8. $\frac{21a+14b}{7}$

3. $\frac{4x+20}{4} = x+5$

9. $\frac{48x+32y}{32}$

4. $\frac{3a+3b}{3} = a+b$

10. $\frac{9a-15b}{12}$

5. $\frac{11x^2+22x}{11} = x^2+2x = x(x+2)$

11. $\frac{6b+24c}{18}$

6. $\frac{26x^2+39x+13}{13}$

12. $\frac{25a+5b+15c}{10}$

- B. Divide each polynomial. Decide whether it is easier for you to divide the original numerator by the common term (as in Example 2) or whether to split the numerator first (as in Example 3).

13. $\frac{18x^2+6x}{3x} = 6x+2$

19. $\frac{x(x+4)-6(x+4)}{x+4}$

14. $\frac{10x^2+6x}{2x} = 5x+3$

20. $\frac{y(y+3)+7(y+3)}{y+3}$

15. $\frac{40y^2+10y}{5y} = 8y+2$

21. $\frac{z(z+2)-5(z+2)}{z+2}$

16. $\frac{42xy+49x}{7x} = 6y+7$

22. $\frac{22x^2+66x}{11x}$

17. $\frac{38xy+38x}{19x} = 2y+2 = 2(y+1)$

23. $\frac{x(y-2)-6(y-2)}{y-2}$

18. $\frac{3x+18}{x+6}$

24. $\frac{a(b+3)+3(b+3)}{b+3}$

- C. Choose the one best answer to each question.

25. Which of the following is equal

$$\text{to } \frac{21a+14b}{7}?$$

- A. $5a+5b$
- B. $3a+14b$
- C. $3a+2b$
- D. $21a+2b$

26. James has $27x$ apples, Rachel has $51y$ oranges, and Glen has $60z$ peaches.

Which of the following expressions represents the average number of pieces of fruit that James, Rachel, and Glen have in their baskets?

- A. $9x+51y+60z$
- B. $46x+46y+46z$
- C. $9x+17y+60z$
- D. $9x+17y+20z$

Need Extra Practice? Read and complete pages 370-371

ALGEBRAIC EXPRESSIONS PRACTICE QUESTIONS

1. Which of the following expressions is equal to $6 - 4(x + 3)$?

- A. $4x + 3$
B. $4x - 9$
C. $-4x + 9$
 D. $-4x - 6$

2. If Kris makes d dollars and Heidi makes 75 dollars less than 3 times Kris's wage, what does Heidi make in terms of d ?

- A. $d + 75$
B. $d - 225$
 C. $3d - 75$
D. $3d - 225$

3. If there are $4x$ identical schools in a region and each school has $3y$ classrooms each with $7x$ desks, how many desks are there in the region?

- A. $11x + 3y$
B. $28x + 3y$
C. $84xy^2$
 D. $84x^2y$

4. Which of the following is equivalent to $x^2 - 25$?

- A. $x(x - 25)$
B. $(x - 5)^2$
 C. $(x + 5)(x - 5)$
D. $(x - 25)^2$

5. If Tom has $9x$ baseball cards, Adam has 13 more than Tom, and Dave has $2y$ baseball cards, together they would have how many cards?

- A. $9x + 2y + 13$
B. $18xy + 13$
C. $18xy + 2y$
 D. $18x + 2y + 13$

Questions 6 and 7 refer to the figure below.

The figure below is a multiplication box. Each place represents the horizontal number multiplied by the vertical number; for example, the 9 in the lower right corner equals 3 multiplied by 3.

	5	y	3
1	5	<i>y</i>	3
c	20	<i>a</i>	12
3	<i>b</i>	<i>d</i>	9

6. Which of the following is equal to ab ?

- A. $5y$
 B. $60y$
C. $100y$
D. $500y$

7. Which of the following is equal to $a - d$?

- A. b
B. c
C. x
 D. y

8. Multiply $7c^2(a^2 + 5b + 7c^2)$.
- $7a^2c^2 + 35bc^2 + 49c^4$
 - $7(ac)^2 + 35(bc)^2 + 49c^4$
 - $7a^2 + 35b + 49c^4$
 - $a^2 + 5b + 14c^2$
9. A Little League pie sale fundraiser generated \$900. If there were $6x$ pies sold, how much did each pie cost?
- \$10
 - \$15
 - $\frac{x}{150}$
 - $\frac{150}{x}$
10. Simplify the expression
- $$\frac{(a-4)^2(6b)}{2(3b)(a+4)(a-4)}$$
- $\frac{a-4}{a+4}$
 - $\frac{a+4}{a-4}$
 - $\frac{a-2}{2}$
 - 1
11. Emilie buys x ounces of chicken for each of her guests at a dinner party. There are $8y$ people coming, and chicken is $\$z$ a pound. How much will the total amount of chicken cost in dollars? (Hint: There are 16 ounces in one pound.)
- $8xyz$
 - $16xyz$
 - $\frac{xyz}{2}$
 - $\frac{xyz}{8}$
12. What is the value of the expression $6(x - y) - 8x$ when $x = -2$ and $y = 5$?
- 58
 - 26
 - 2
 - 34
13. Which of the following would be equal to $x^2 + 6z$ multiplied by $2y - 4z$ if $x = 2$, $y = 4$, and $z = 3$?
- 88
 - 72
 - 0
 - 104
14. If every member of a team is paid $5p$ dollars for his or her participation, and Team Alpha has $6k$ members, Team Beta has $4p$ members, and Team Delta has $9h$ members, which of the following represents the total amount paid to the members of all three teams?
- $1080hkp$
 - $1080hkp^2$
 - $120p^2k + 45ph$
 - $30kp + 20p^2 + 45hp$

SECTION 3: Functions:

Lesson 1: Practice 1.1, Section A: q1-10, Practice 1.2, Section A q1-5,

PRACTICE 1.1

Example 4: In physics, *power* is defined as the amount of work done per unit of time. The formula for power is: $\text{power} = (\text{force} \times \text{distance}) \div \text{time}$, or $p = fd \div t$. Rearrange that equation so that you could solve for f if you knew the values of p , d , and t .

Step 1. Multiply both sides of the equation by t .

$$p = fd \div t$$
$$pt = fd$$

Step 2. Divide both sides of the equation by d .

$$\frac{pt}{d} = f$$

A. Solve for the variable in each equation.

1. $7x = 63$ $x = 9$

2. $23 + m = 51$ $m = 28$

3. $-13 = y - 12$ $y = -1$

4. $\frac{x}{4} = -16$ $x = -64$

5. $5a = 625$ $a = 125$

6. $y - 17 = -30$ $y = -13$

7. $x + 6 = 33$ $x = 27$

8. $4c = 28$ $c = 7$

9. $\frac{12}{x} = -3$ $x = -4$

10. $26 = b + 33$ $b = -7$

11. $93 = 3x$

12. $s + 16 = 8$

13. $36 = \frac{x}{3}$

14. $t + 14 = 53$

15. $\frac{x}{6} = 8$

16. $16y = -48$

17. $r - 35 = 75$

18. $24 = \frac{120}{x}$

19. $5y = -45$

20. $d + 45 = 20$

21. $16 = 4x$

B. Choose the one best answer to each question.

Questions 22 and 23 refer to the following table.

April Time Sheet Summary
Hours Worked per Week

Week	1	2	3	4
Kayla Sax	36	40	40	y
Erin Grady	x	24	28	38

22. Kayla and Erin worked a total of 77 hours during Week 1. Let x = Erin's hours for Week 1. Which of the following equations could be used to solve for Erin's hours during Week 1?

- A. $x - 36 = 77$
- B. $x + 77 = 36$
- C. $x + 36 = 77$
- D. $x - 77 = 36$

23. Erin worked twice as many hours as Kayla did during Week 4. Let y = Kayla's hours for Week 4. Which of the following equations could be used to solve for Kayla's hours during Week 4?

- A. $\frac{y}{2} = 38$
- B. $38y = 2$
- C. $2y = 38$
- D. $\frac{1}{2y} = 38$

24. The quotient of a number divided by 4 is 32. What is the number?

- A. 8
- B. 28
- C. 128
- D. 512

25. In electricity, the relationship between voltage, current, and resistance through a wire is summed up in Ohm's law. Ohm's law is represented by the formula: $V = IR$, where V is voltage, I is current, and R is resistance. If you knew both voltage and resistance, how could you rearrange Ohm's law to solve for current? Arrange the boxes below to represent your answer. You may not have to use all the boxes.

R I V \div \times $=$

26. Mike had \$572.18 in his checking account. After writing a check, he had \$434.68. Which of the following equations could be used to find the amount of the check (c)?

- A. $$572.18 + c = \434.68
- B. $$572.18 - c = \434.68
- C. $$572.18c = \434.68
- D. $\frac{\$572.18}{c} = \434.68

PRACTICE 1.2

4. Check your work by substituting your answer back into the original equation.

$$\begin{aligned} a\left(\frac{17}{a}-2+2\right)-3 &= 14 \\ a\left(\frac{17}{a}\right)-3 &= 14 \\ 17-3 &= 14 \\ 14 &= 14 \end{aligned}$$

A. Solve for the variable in each equation.

1. $3x - 20 = 130$ $x = 50$
2. $2y - 8 = -3y - 18$ $y = 5 \frac{1}{5}$
3. $6m = 14m - 16$ $m = 2$
4. $2x + 5 + 6x = -27$ $x = -4$
5. $5y + 3(y + 2) = 54$ $y = 6$
6. $17 - 4z + 2z = 13$
7. $6m - 4 = m + 11$
8. $35 = x + 7 + 6x$

9. $5p - 2 = 6p - 9$
10. $50 = 3(s + 16) - 2(s - 2)$
11. $\frac{5(2x - 10)}{2} + 14 = 19$
12. $3(3 + r) = 2r + 4$
13. $5y = 2y + 22 + y$
14. Solve for x : $\frac{mx}{2} = 30$
15. Solve for z : $az + bz = 13$
16. Solve for y : $\frac{a}{1+y} = 10$

B. Choose the one best answer to each question.

17. Three times a number increased by 9 is 15 less than six times the number. Let x = the unknown number. Which of the following equations could be used to find the value of x ?

- A. $3(9x) = 6(15x)$
- B. $3x(9) = 6x - 15x$
- C. $3x + 9 = 15 - 6x$
- D. $3x + 9 = 6x - 15$

18. Dave has 500 baseball cards, which is as many as Eric and Travis have combined. Eric has three times as many cards as Travis has.

Dave	Eric	Travis
500	$3x$	x

From the information, you can write the equation $3x + x = 500$. How many cards does Eric have? (Hint: Solve for x . Then find how many cards Eric has.)

- A. 150
- B. 250
- C. 350
- D. 375

19. The difference of four times a number and 7 is 15 plus the quotient of the number and 3. Which of the following equations could be used to find the value of x ?

- A. $4x - 7 = \frac{x}{3} + 15$
- B. $7 - 4x = \frac{x}{3} + 15$
- C. $7 - 4x = \frac{3}{x} + 15$
- D. $4x - 7 = \frac{3}{x} + 1$

20. Kim earned x dollars at his part-time job on Friday. His wife earned \$12 more than twice Kim's pay ($2x + 12$). Together, they earned \$174. How much did Kim earn on Friday?

(Hint: Use the equation $x + (2x + 12) = \$174$.)

- A. \$54
- B. \$87
- C. \$108
- D. \$120

Lesson 2: Practice 2, Section A, q1-5

PRACTICE 2

A. Solve.

1. Two houses are for sale on the same street. The second house has 1000 square feet less than twice the square feet of the first house. Together the houses have 4400 square feet. What is the square footage of the first house? $\Rightarrow 1800$
2. Julia has 24 coins in her pocket. The coins are either dimes or quarters. The total value of the coins is \$4.50. How many coins are dimes? [Hint: The value of the dimes is $0.10x$, and the value of the quarters is $0.25(24 - x)$.] $\Rightarrow 10$
3. The Bulldogs won twice as many games as they lost. If they played a total of 36 games, how many did they win? (There were no tied games.) $\Rightarrow 24$
4. The sum of four consecutive even numbers is 212. What is the third number? (Hint: Let x = the first number, $x + 2$ = the second number, $x + 4$ = the third, and so on.) $\Rightarrow 54$
5. A children's store is selling pants for \$6 each and shirts for \$4. Brenda bought 13 items and paid \$62. How many shirts did she buy? $\Rightarrow 5$
6. The sum of three consecutive numbers is 180. What is the least number in the series?
7. In a month Andrew spends twice as much on rent as he does on food for his family. Last month, he spent \$1650 on rent and food. How much did he spend on rent?
8. George spends four times as much time helping customers as he does stocking shelves. Last week, he spent 35 hours on the two tasks. How many hours were spent helping customers?

B. Choose the one best answer to each question.

9. Sylvia scored 10 points better than Wiley on their science exam. Greg scored 6 points less than Wiley. Altogether, the students earned 226 points. How many points did Sylvia earn?
 - A. 74
 - B. 78
 - C. 84
 - D. 94
10. Two adults and four children paid \$48 to get into the fair. A child's ticket is \$6 less than an adult's ticket. What is the cost of an adult's ticket?
 - A. \$15
 - B. \$12
 - C. \$9
 - D. \$6
11. Jenny is four times as old as her niece Tina. In 12 years, Jenny will be only twice as old as Tina. The chart shows expressions for Tina and Jenny's ages now and in 12 years.

	Jenny's Age	Tina's Age
Now	$4x$	x
In 12 Years	$4x + 12$	$x + 12$

How old is Tina now?

- A. 4
- B. 6
- C. 8
- D. 12

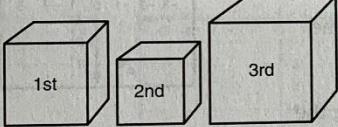
STUDY ADVICE

Remember to include rewards and breaks in your study schedule. Celebrate a job well done with a fun outing. Don't try to study seven days a week—this can lead to burnout. Plan a day off to rest, relax, and reward yourself for the focused studying you have done!

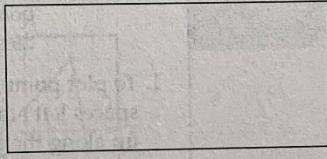
Lesson 3: Practice 3, Section A: q1-5

PRACTICE 3

A. Use guess-and-check to solve the following problems.

1. A number divided by 2 is equal to 12 less than the original number. What is the number?
A. 12
B. 20
 C. 24
D. 28
2. For a fund-raiser, Sandra raised three times as much money as Barbara, and Barbara raised \$50 more than Matt. Together they raised \$950. How much money did Barbara raise?
A. \$150
B. \$175
 C. \$200
D. \$325
3. The three packages below weigh a total of 15 pounds.


The first package weighs twice as much as the second package. The third package weighs three times as much as the second package. How many pounds does the first package weigh?

A. 2
B. 4
 C. 5
D. $6\frac{1}{2}$
4. Hannah scored a total of 170 points on two math tests. The score of the first test was 6 points lower than the score of the second test. How many points did Hannah score on the first test?
A. 76
 B. 82
C. 88
D. 90
5. Nelson is twice as old as Maria. Six years ago, Nelson was five times as old as Maria. How old was Nelson six years ago?
A. 5
B. 10
C. 15
D. 20
6. Which of the following is a solution for the quadratic equation $2x^2 + x - 15 = 0$?
A. -3
B. -1
C. 2
D. 3
7. An amusement park sells adults' and children's passes. An adult's pass is \$25, and a child's pass is \$15. A group spent \$440 on 20 passes. How many children's passes did the group purchase?
A. 5
B. 6
C. 9
D. 14
8. The rectangular garden below is twice as long as it is wide. If the total distance around the garden is 120 feet, what is the width of the garden in feet?
Length = $2 \times$ Width

A. 15
B. 20
C. 30
D. 40

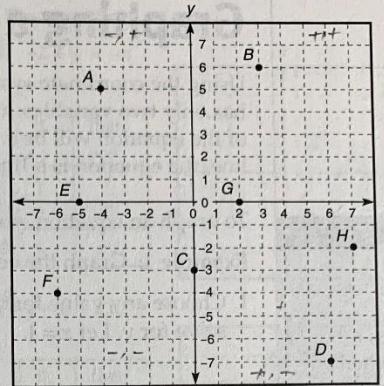
Lesson 4: Practice 4, Section A

PRACTICE 4

A. Write the ordered pair for each point.

1. Point A $(-4, 5)$
2. Point B $(2, 6)$
3. Point C $(0, -3)$
4. Point D $(6, -2)$
5. Point E $(-5, 0)$
6. Point F $(-6, -4)$
7. Point G $(1, 0)$
8. Point H $(7, -2)$

W



B. Plot the points on the coordinate grid.

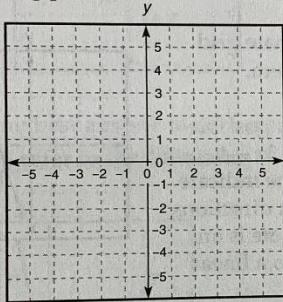
9. Plot the following points:

J at $(-3, -2)$

K at $(4, 0)$

L at $(1, -3)$

M at $(-4, 2)$



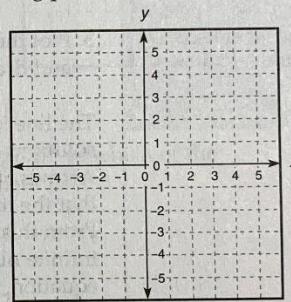
10. Plot the following points:

N at $(0, -1)$

O at $(-4, -4)$

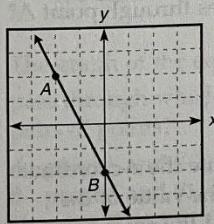
P at $(3, 1)$

Q at $(-3, 0)$



C. Choose the one best answer to each question.

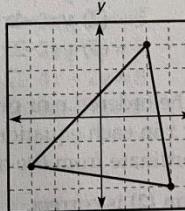
11. On the coordinate grid below, a line passes through points A and B.



Which of the following ordered pairs also lies on the line?

- A. $(1, 0)$
- B. $(1, -1)$
- C. $(0, -1)$
- D. $(-1, 0)$

12. Two of the corners of a triangle are located at $(3, -3)$ and $(2, 3)$. What is the location of the third corner as shown in the diagram below?



- A. $(-3, -2)$
- B. $(-3, 2)$
- C. $(-2, -3)$
- D. $(3, -2)$

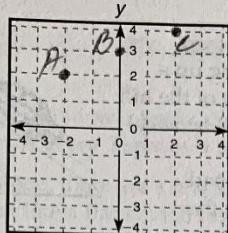
Lesson 5: Practice 5, Section A

PRACTICE 5

A. Fill in the y column in each table and graph the equation.

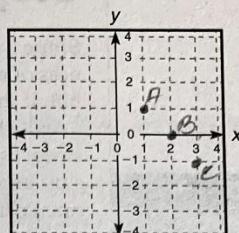
1. $y = \frac{1}{2}x + 3$

	If $x =$	then $y =$
A	-2	2
B	0	3
C	2	4



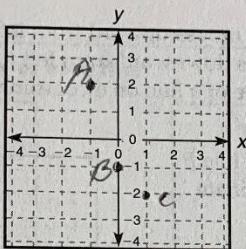
3. $-2 + y = -x$

	If $x =$	then $y =$
A	1	1
B	2	0
C	3	-1



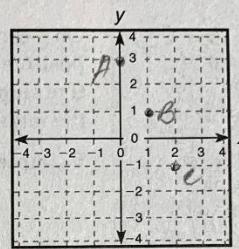
2. $y + 3x = -1$

	If $x =$	then $y =$
A	-1	2
B	0	-1
C	1	-2



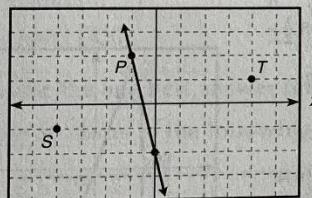
4. $y = 3 - 2x$

	If $x =$	then $y =$
A	0	3
B	1	1
C	2	-1



B. Choose the one best answer to each question.

Questions 5 and 6 refer to the following coordinate grid.



5. The graph of the equation $y = \frac{1}{4}x$ will pass through which of the following pairs of points?

- A. point S and $(-1, 2)$
- B. point S and $(0, -2)$
- C. point T and $(0, 0)$
- D. point T and $(0, -2)$

6. Line P is the graph of which of the following equations?

- A. $y = 4x + 1$
- B. $y = -4x - 1$
- C. $y = 4x + 2$
- D. $y = -4x - 2$

7. Point C is located at $(-3, 5)$. A graph of which of the following equations would pass through point C?

- A. $3x + 2y = 5$
- B. $2x + 3y = 9$
- C. $4x - 2y = 8$
- D. $3x - 3y = 6$

STUDY ADVICE

Hang in there: You're more than halfway through the Mathematics unit! It may feel like a long haul until Test Day, but keep thinking about how good it will feel to have your high school equivalency degree in hand!