What will be on the Spring Placement Test?

- Integer Operations
- Fraction Operations
- Simplifying Expressions
- Substitution
- Graphing
- Volume and Surface Area
- Similarity of Geometric Shapes
- Percent Problems
- Solving Equations

Name _____ Date _____

Problems with Percents

1. In a group of 60 children, 12 have brown eyes. What percent have brown eyes?

2. A salesman makes a 5% commission on all he sells. How much does he have to sell to make $1500?

3. A sales tax of $5\frac{3}{4}$ % is charged on a blouse priced at $42. How much sales tax must be paid?

4. A baby weighed 7.6 pounds at birth and $9\frac{1}{2}$ pounds after 6 weeks. What was the percent increase?

5. A scale model of a building is 8% of actual size. If the model is 1.2 meters tall, how tall is the building?

6. The purchase price of a camera is $84. The carrying case is 12% of the purchase price. Find the total cost including the carrying case.

7. The regular price of a record cost is $15. Find the discount and the new price if there is a 20% discount.

8. A basketball team played 45 games. They won 60% of them. How many did the team win?

9. A test had 50 questions. Joe got 70% of them correct. How many did Joe get correct?

10. Diet soda contains 90% less calories than regular soda. If a can of regular soda contains 112 calories, how many calories does a can of diet soda contain?

0-7424-1767-5 Pre-Algeb

Name _____ Date _____

Solving Equations Using the Distributive Property

$$4(x-3)=20$$
$$4x-12=20$$
$$4x-12+12=20+12$$
$$\frac{4x}{4}=\frac{32}{4}$$
$$x=8$$

1. $3(x+8)=-6$

2. $75=-5(a+5)$

3. $-8(y-6)=-16$

4. $20=4(\frac{t}{4}-2)$

5. $17(x-2)=-34$

6. $63=9(2-a)$

7. $6(2-\frac{x}{6})=1$

8. $-36=6(y-2)$

9. $-7(r+8)=-14$

10. $3(m+5)=42$

11. $-54=3(2+5m)$

12. $-3(x-7)+2=20$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Solving Equations - Variables on Both Sides

$$5x + 6 = 2x + 5$$
$$5x - 2x + 6 = 2x - 2x + 15$$
$$3x + 6 - 6 = 15 - 6$$
$$\frac{3x}{3} = \frac{9}{3}$$
$$x = 3$$

1. $20y + 5 = 5y + 65$

2. $13 - t = t - 7$

3. $-3k + 10 = k + 2$

4. $-9r = 20 + r$

5. $6m - 2\frac{1}{2} = m + 12\frac{1}{2}$

6. $18 + 4.5p = 6p + 12$

7. $5x - \frac{1}{4} = 3x - \frac{5}{4}$

8. $-x - 2 = 1 - 2x$

9. $3k + 10 = 2k - 21$

10. $8y - 6 = 5y + 12$

11. $-t + 10 = t + 4$

12. $4m - 9 = 5m + 7$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Dividing Integers

$\frac{-24}{-8} = 3$

$\frac{-}{-} = +$

$-32 \div 4 = -8$

$- \div + = -$

Like Signs ⟹ Positive

Unlike Signs ⟹ Negative

1. $-49 \div 7 =$
2. $100 \div -4 =$
3. $-75 \div -15 =$
4. $-84 \div 21 =$
5. $-120 \div 5 =$
6. $57 \div -19 =$
7. $-288 \div -4 =$
8. $804 \div 67 =$
9. $\frac{17}{-17} =$
10. $\frac{-72}{-18} =$
11. $\frac{-195}{13} =$
12. $\frac{-23}{-1} =$
13. $\frac{200}{10} =$
14. $\frac{270}{-45} =$
15. $\frac{-343}{7} =$
16. $\frac{-1125}{-45} =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Adding and Subtracting Fractions

Use the common denominator. Add or subtract the numerators. Reduce to lowest terms.

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$ Add same

1. $\frac{2}{9} + \frac{5}{9} =$
2. $\frac{3}{4} - \frac{1}{4} =$
3. $\frac{9}{15} + \frac{5}{15} =$
4. $\frac{19}{20} - \frac{14}{20} =$
5. $\frac{27}{38} + \frac{13}{38} =$
6. $\frac{35}{60} - \frac{17}{60} =$
7. $\frac{17}{20} + \frac{23}{20} =$
8. $\frac{25}{13} - \frac{12}{13} =$
9. $\frac{11}{18} + \frac{16}{18} =$
10. $\frac{17}{48} - \frac{14}{48} =$
11. $\frac{7}{45} + \frac{8}{45} =$
12. $\frac{33}{50} - \frac{17}{50} =$
13. $\frac{16}{33} + \frac{21}{33} =$
14. $\frac{43}{56} - \frac{19}{56} =$
15. $\frac{12}{42} + \frac{31}{42} =$
16. $\frac{29}{52} - \frac{13}{52} =$
17. $\frac{15}{18} + \frac{8}{18} =$
18. $\frac{43}{65} - \frac{28}{65} =$

0-7424-1787-5 Pre-Algebra

Name _____ Date _____

Dividing Fractions

Invert and multiply

$$1\frac{1}{2} \div 3\frac{3}{7} = \frac{3}{2} \div \frac{24}{7} = \frac{3}{2} \cdot \frac{7}{24} = \frac{\cancel{3}^{1}}{2} \cdot \frac{7}{\cancel{24}_{8}} = \frac{7}{16}$$

rewrite the mixed numbers

1. $\frac{3}{7} \div \frac{1}{2} =$

2. $\frac{17}{9} \div \frac{8}{9} =$

3. $6\frac{2}{3} \div 5 =$

4. $1\frac{7}{9} \div 4\frac{2}{9} =$

5. $\frac{15}{4} \div \frac{5}{14} =$

6. $\frac{11}{12} \div \frac{13}{8} =$

7. $4 \div 4\frac{2}{5} =$

8. $3\frac{1}{4} \div 4\frac{3}{8} =$

9. $\frac{6}{15} \div \frac{9}{10} =$

10. $\frac{7}{8} \div 2\frac{1}{3} =$

11. $9\frac{3}{8} \div 3\frac{3}{4} =$

12. $5\frac{1}{6} \div \frac{31}{6} =$

13. $\frac{7}{8} \div \frac{3}{4} =$

14. $\frac{7}{12} \div \frac{7}{4} =$

15. $4\frac{6}{7} \div \frac{1}{3} =$

16. $5\frac{1}{2} \div \frac{7}{4} =$

17. $2\frac{2}{9} \div 4\frac{2}{6} =$

18. $5\frac{5}{12} \div 3\frac{1}{3} =$

0-7424-1757-5 Pre-Algebr

Name _____ Date _____

Combining Like Terms

$8x + 5y + {}^{-}17x = -9x + 5y$

1. $9x + 4x =$
2. $17x + x =$
3. $m + ({}^{-}4m) =$
4. ${}^{-}7x - 8x =$
5. $14a - 19a =$
6. $-a + 9a =$
7. $6xy + 5xy =$
8. ${}^{-}9m - m =$
9. $15a + ({}^{-}11a) =$
10. ${}^{-}14x + 13x =$
11. $5x^2y + 13x^2y =$
12. $21xy + ({}^{-}9xy) =$
13. $17x + 1 =$
14. $3.5y - 7.2y =$
15. ${}^{-}4.7y - 2.3y =$
16. $3a + 5c - 9a =$
17. $2x - 9x + 7 =$
18. $7x - 8 - 11x =$
19. $3x - 3y - 9x + 7y =$
20. $17x + 4 - 3x =$
21. $3x - 7y - 12y =$
22. $11a - 13a + 15a =$
23. $17x + 5a - 3x - 4a =$
24. $6x + 9y + 2x - 8y + 5 =$
25. $3xy + 4xy + 5x^2y + 6xy^2 =$
26. ${}^{-}25y - 17y + 6xy - 3xy =$

0-7424-1758-3 Algebra

Name _____ Date _____

Plotting Points

Connect each of the following ordered points.

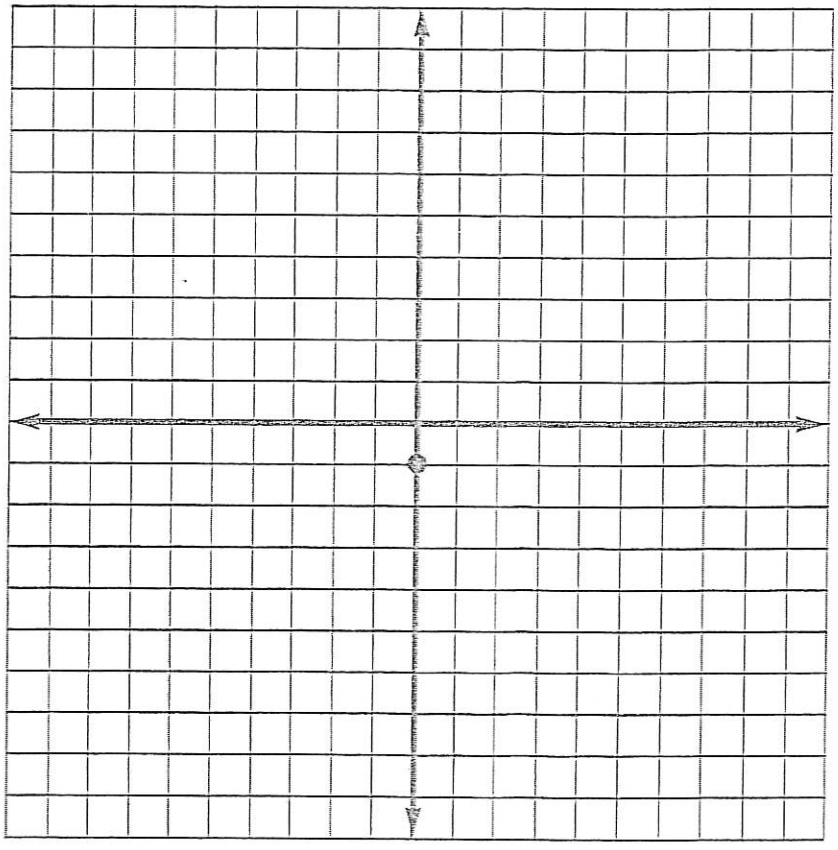
$(x, y) = (0, -1)$

- vertical move ⟹ down one
- horizontal move ⟹ no move

"Ancient History"

Start at (0, -1)

(1, -1)	(0, 3)
(1, -3)	(-1, 4)
(3, -3)	(-2, 3)
(3, -1)	(-3, 4)
(5,0)	(-4, 3)
(8,0)	(-5, 1)
(7,1)	(-8, 2)
(9,0)	(-5, 0)
(8,2)	(-3, -1)
(5,1)	(-3, -3)
(4,3)	(-1, -3)
(3,4)	(-1, -1)
(2,3)	(0, -1)
(1, 4)	End



Name: _____ Date: _____

Skill: Applying appropriate techniques, tools, and formulas to determine measurements

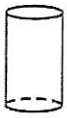
Unit 3: Measurement: *Practice Activity 7*

Just a Tip: Remember the following formulas for finding the volumes of solids.

Cube or rectangular prism: $V = lwh$
Cylinder: $V = \pi r^2 h$
Cone: $V = \frac{1}{3}\pi r^2 h$
Pyramid: $V = \frac{1}{3}Bh$ B = area of base

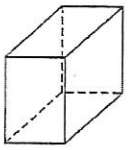
Find the volume of each solid. Round answers to the nearest hundredth, if necessary.

1. _____

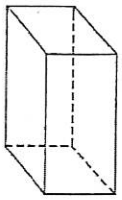


2. _____

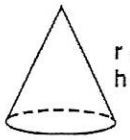
3. _____



4. _____

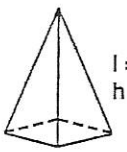


5. _____

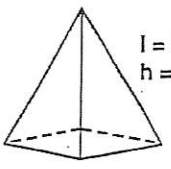


6. _____

7. _____



8. _____

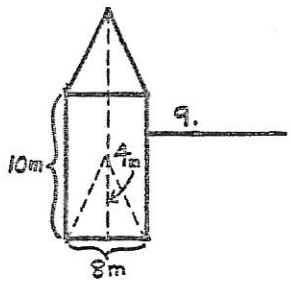


PRISM & PYRAMID CALCULATIONS, CONTINUED

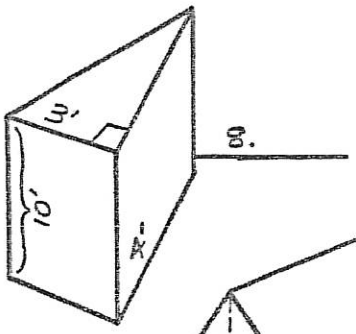
Use with page 30.

Match the following triangular prisms with their volumes. Don't forget how to measure a triangular base! Find the area of the triangular base and then multiply that number by the height of the prism.

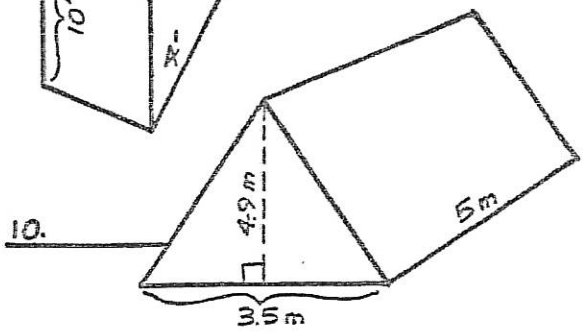
7. _____



9. _____



8. _____



10. _____

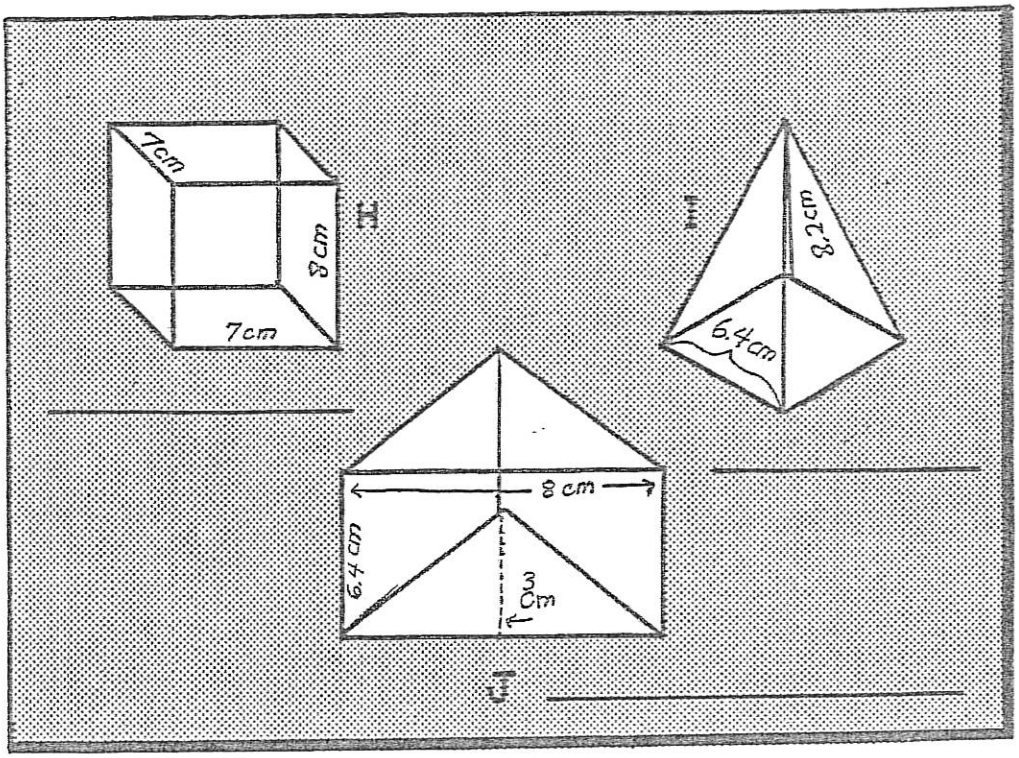
d. 160 m^3

e. 42.875 m^3

f. 70 ft^3

g. 60 yd^3

OLYMPIC CHALLENGE

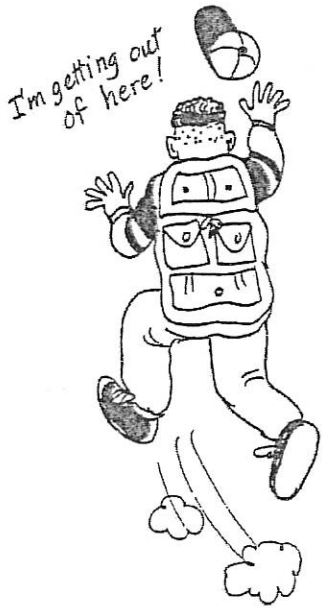


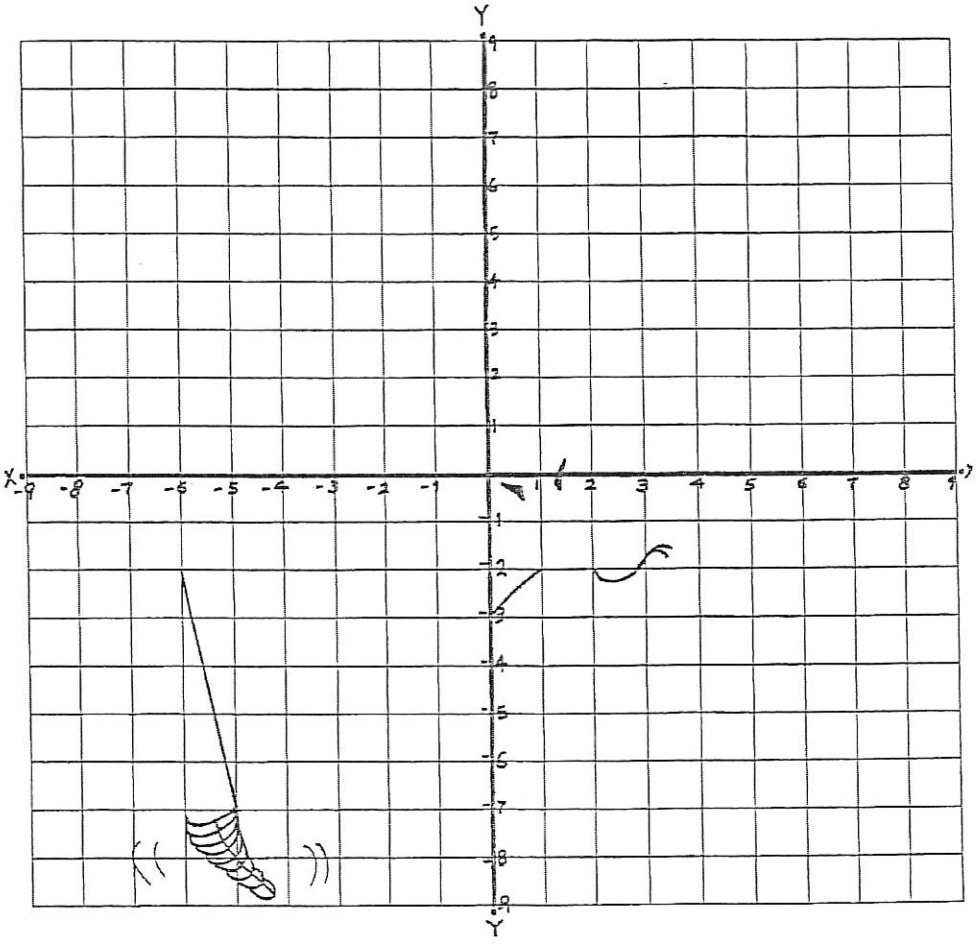
Which has the greatest volume? _____

Name _____

A STARTLING MEETING

Mike has met an unexpected visitor! What creature has he stumbled upon?
To find out, follow the directions to plot points and draw lines on the coordinate grid.





Plot the points in the first three columns.
When the points are plotted, connect them in the order given.

(0, –2)	(0, 4)	(8, 2)
(1, –4)	(–4, 3)	(6, 6)
(4, –2)	(–6, –2)	(2, 8)
(2, 2)	(–3, –7)	(0, 8)
(–2, 1)	(0, –9)	(–4, 6)
(–3, –2)	(2, –9)	(–6, 4)
(–2, –3)	(4, –8)	(–8, –1)
(1, –6)	(5, –7)	(–8, –4)
(6, –2)	(7, –5)	(–6, –7)
(4, 4)	(9, –3)	Stop.
Continue to the next column.	Continue to the next column.	Connect the points.

Plot these points.
Connect them in the order given.
(0, –1)
(2, –2)
(2.5, 0)
(1, 1)
(0, 1.5)
(–2, –2)
(–2, –3)
Stop.
Connect the points.

Name _____

Name _____ Date _____

What's Not to Like?

Simplify each expression by combining like terms. Circle the expression in each problem that does not belong. Place the letter above the problem number below.

1. A. $5t + 3r + 9t - 10r$	E. $r + t - 8r + 13t$	I. $-r + 4t + 10t + 8r$
2. D. $12x - 3y + x + 2y$	E. $3(4x - 3y) + x + 3y$	F. $4(4x - 2y) - 3x + 7y$
3. E. $4(y - 7x) - y$	I. $^-30x - (^-2x)$	O. $^-7(4x + y) + 7y$
4. U. $6(x - y) - 3(3x + y)$	V. $3(3x - y) - 6y$	W. $4x + y - 7x - 10y$
5. Q. $3(r - 1) - 4r + 5$	X. $2(3 - 2r) - 4(2 - r)$	Z. $-r + 7 + 3r - 9 - 2r$
6. L. $8(x + y) + 3(x + y)$	M. $10(x + y) + x + y$	N. $9(x + y) - 2(x + y)$
7. A. $3(2b - a) - (2a - b)$	B. $3(a + 2b) - (b + 2a)$	C. $2(a + 2b) - (a - b)$
8. I. $^-5(a - b) - 2(a - b) + 8(a - b)$	U. $6(a - b) - 4(a - b) + (a - b)$	O. $(a - b) - (a - b) + (a - b)$
9. R. $3(x - y) - 2(y - x)$	S. $2(x - y) - 3(y - x)$	T. $3(y - x) - 2(x - y)$
10. L. $^-4(x + 2(5xy - x))$	M. $^-4(x + 5(^-3xy + x))$	N. $^-2(3x + 3(^-10xy + 3x))$

Two expressions in each problem are

2	5	8	1	4	7	10	3	6	9

Name _____ Date _____

... More Mixed Practice with Fractions

1. $8\frac{1}{15} - 5\frac{11}{20} =$

2. $3\frac{1}{9} + 8\frac{3}{7} + 1\frac{1}{3} =$

3. $1\frac{7}{8} \cdot 3\frac{3}{5} =$

4. $4\frac{4}{5} \div 2\frac{8}{10} =$

5. $3\frac{5}{12} + 5\frac{1}{4} - 2\frac{7}{20} =$

6. $(\frac{16}{21} \cdot 3\frac{1}{4}) \div 6\frac{1}{3} =$

7. $5\frac{7}{10} - (\frac{25}{27} \div 3\frac{1}{3}) =$

8. $(2\frac{15}{24} + 3\frac{11}{12}) \cdot 6\frac{1}{2} =$

9. $7\frac{3}{12} - 2\frac{8}{9} =$

10. $1\frac{1}{6} \cdot 3\frac{5}{7} \cdot 2\frac{2}{9} =$

11. $8\frac{7}{12} + 11\frac{3}{4} =$

12. $7 - (3\frac{7}{9} \div 4\frac{2}{3}) =$

13. $2\frac{1}{2} \cdot 3\frac{3}{15} =$

14. $5\frac{2}{9} - 2\frac{17}{18} + 1\frac{2}{3} =$

15. $(3\frac{6}{8} \div 4\frac{2}{4}) - \frac{13}{16} =$

16. $4\frac{2}{3} \cdot 1\frac{3}{4} \cdot 3\frac{3}{4} =$

17. $3\frac{4}{15} \div 8\frac{3}{45} =$

18. $12\frac{1}{2} - 7\frac{15}{16} =$

19. $(1\frac{12}{13} \cdot 7\frac{3}{5}) - 3 =$

20. $2\frac{1}{8} + (6\frac{2}{3} \div 8\frac{4}{9}) =$

21. $3\frac{1}{3} \cdot 7\frac{5}{6} \cdot 2\frac{2}{5} =$

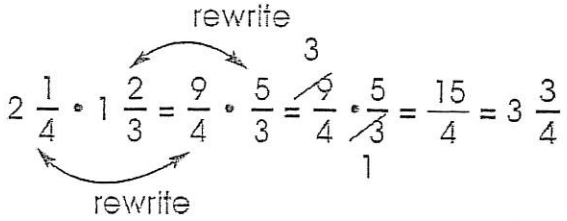
22. $1\frac{15}{16} \div 3\frac{7}{24} \div 3\frac{11}{12} =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Multiplying Fractions

Multiply numerators. Multiply denominators. Reduce to lowest terms.
Hint: Rewrite mixed numbers as improper fractions.



1. $\frac{1}{2} \cdot \frac{5}{6} =$

2. $3 \cdot \frac{1}{2} =$

3. $\frac{2}{5} \cdot \frac{1}{3} =$

4. $\frac{16}{5} \cdot \frac{25}{27} =$

5. $\frac{8}{21} \cdot 2\frac{7}{16} =$

6. $1\frac{5}{7} \cdot 2\frac{1}{4} =$

7. $5\frac{7}{8} \cdot 4 =$

8. $\frac{5}{7} \cdot \frac{7}{5} =$

9. $3\frac{2}{3} \cdot \frac{17}{22} =$

10. $\frac{5}{6} \cdot 2 =$

11. $8\frac{1}{3} \cdot \frac{3}{4} =$

12. $4\frac{1}{4} \cdot 3\frac{1}{5} =$

13. $2\frac{1}{6} \cdot \frac{18}{20} =$

14. $\frac{21}{35} \cdot 3\frac{4}{7} =$

15. $1\frac{3}{5} \cdot 2\frac{3}{16} =$

16. $6\frac{3}{4} \cdot 1\frac{5}{9} =$

17. $3\frac{1}{3} \cdot 1\frac{3}{18} =$

18. $\frac{1}{2} \cdot \frac{6}{11} \cdot \frac{3}{5} =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

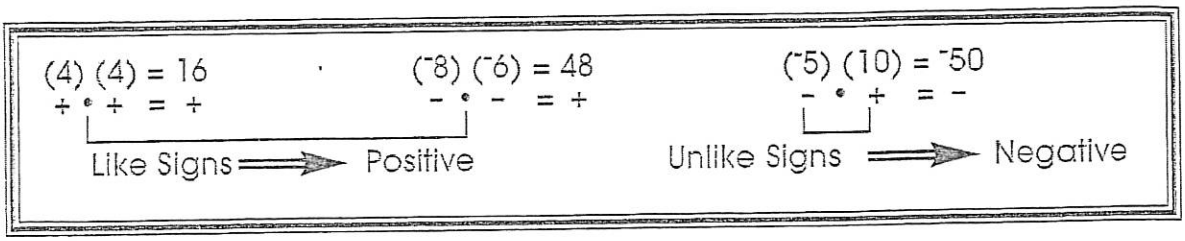
Mixed Practice with Integers

1. $^{-}41 + {}^{-}125 =$
2. $79 - 88 =$
3. $^{-}3 \bullet {}^{-}4 =$
4. $\frac{^{-}125}{5} =$
5. $19 \bullet {}^{-}24 =$
6. $\frac{^{-}123}{41} =$
7. $82 + {}^{-}95 =$
8. $27 - {}^{-}46 =$
9. $^{-}31 - {}^{-}32 =$
10. $\frac{^{-}825}{^{-}33} =$
11. $^{-}34 + 52 + {}^{-}18 =$
12. $14 \bullet {}^{-}12 \bullet 3 =$
13. $\frac{^{-}185}{5} \bullet -4 =$
14. $76 - 19 + {}^{-}60 =$
15. $17 - {}^{-}12 - 22 =$
16. $100 \bullet {}^{-}4 \bullet 40 =$
17. $\frac{54}{^{-}9} + \frac{33}{11} + \frac{24}{8} =$
18. $^{-}51 \div 17 =$
19. $4 - 8 + {}^{-}9 =$
20. $-\frac{98}{49} \bullet {}^{-}10 =$
21. $(256 \div {}^{-}16) \bullet {}^{-}3 =$
22. $({}^{-}18 - {}^{-}26 + {}^{-}13) \bullet {}^{-}2 =$
23. $(202 \div {}^{-}196 - 321) \div {}^{-}5 =$
24. $(\frac{^{-}575}{23} - 18) \bullet {}^{-}11 =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Multiplying Integers



1. (⁻3) (⁻6) =
2. (14) (⁻4) =
3. (25) (2) =
4. (20) (⁻49) =
5. (75) (15) =
6. (⁻30) (⁻30) =
7. (⁻17) (23) =
8. (⁻218) (⁻32) =
9. (801) (⁻37) =
10. (⁻89) (⁻321) =
11. (31) (⁻31) (31) =
12. (⁻4) (⁻18) (28) =
13. (⁻53) (⁻14) (⁻7) =
14. (32) (125) (11) =
15. (⁻37) (⁻18) (⁻5) (2) =
16. (111) (⁻63) (19) =
17. (20) (⁻7) (35) (⁻3) =
18. (16) (⁻8) (⁻10) (⁻1) =
19. (⁻9) (⁻29) (32) (2) =
20. (⁻18) (⁻6) (⁻21) (⁻30) =

0-7424-1787-5 Pre-Alge

Name _____ Date _____

Dividing Integers

$\frac{-24}{-8} = 3$

$\frac{-}{-} = +$

$-32 \div 4 = -8$

$- \div + = -$

Like Signs ⟹ Positive

Unlike Signs ⟹ Negative

1. $-49 \div 7 =$
2. $100 \div -4 =$
3. $-75 \div -15 =$
4. $-84 \div 21 =$
5. $-120 \div 5 =$
6. $57 \div -19 =$
7. $-288 \div -4 =$
8. $804 \div 67 =$
9. $\frac{17}{-17} =$
10. $\frac{-72}{-18} =$
11. $\frac{-195}{13} =$
12. $\frac{-23}{-1} =$
13. $\frac{200}{10} =$
14. $\frac{270}{-45} =$
15. $\frac{-343}{7} =$
16. $\frac{-1125}{-45} =$

Name _____ Date _____

Adding and Subtracting Fractions

Use the common denominator. Add or subtract the numerators. Reduce to lowest terms.

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$ Add same

1. $\frac{2}{9} + \frac{5}{9} =$
2. $\frac{3}{4} - \frac{1}{4} =$
3. $\frac{9}{15} + \frac{5}{15} =$
4. $\frac{19}{20} - \frac{14}{20} =$
5. $\frac{27}{38} + \frac{13}{38} =$
6. $\frac{35}{60} - \frac{17}{60} =$
7. $\frac{17}{20} + \frac{23}{20} =$
8. $\frac{25}{13} - \frac{12}{13} =$
9. $\frac{11}{18} + \frac{16}{18} =$
10. $\frac{17}{48} - \frac{14}{48} =$
11. $\frac{7}{45} + \frac{8}{45} =$
12. $\frac{33}{50} - \frac{17}{50} =$
13. $\frac{16}{33} + \frac{21}{33} =$
14. $\frac{43}{56} - \frac{19}{56} =$
15. $\frac{12}{42} + \frac{31}{42} =$
16. $\frac{29}{52} - \frac{13}{52} =$
17. $\frac{15}{18} + \frac{8}{18} =$
18. $\frac{43}{65} - \frac{28}{65} =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Dividing Fractions

Invert and multiply

$$1\frac{1}{2} \div 3\frac{3}{7} = \frac{3}{2} \div \frac{24}{7} = \frac{3}{2} \cdot \frac{7}{24} = \frac{\cancel{3}^{1}}{2} \cdot \frac{7}{\cancel{24}_{8}} = \frac{7}{16}$$

rewrite the mixed numbers

1. $\frac{3}{7} \div \frac{1}{2} =$

2. $\frac{17}{9} \div \frac{8}{9} =$

3. $6\frac{2}{3} \div 5 =$

4. $1\frac{7}{9} \div 4\frac{2}{9} =$

5. $\frac{15}{4} \div \frac{5}{14} =$

6. $\frac{11}{12} \div \frac{13}{8} =$

7. $4 \div 4\frac{2}{5} =$

8. $3\frac{1}{4} \div 4\frac{3}{8} =$

9. $\frac{6}{15} \div \frac{9}{10} =$

10. $\frac{7}{8} \div 2\frac{1}{3} =$

11. $9\frac{3}{8} \div 3\frac{3}{4} =$

12. $5\frac{1}{6} \div \frac{31}{6} =$

13. $\frac{7}{8} \div \frac{3}{4} =$

14. $\frac{7}{12} \div \frac{7}{4} =$

15. $4\frac{6}{7} \div \frac{1}{3} =$

16. $5\frac{1}{2} \div \frac{7}{4} =$

17. $2\frac{2}{9} \div 4\frac{2}{6} =$

18. $5\frac{5}{12} \div 3\frac{1}{3} =$

0-7424-1787-5 Pre-Algebra

Name _____ Date _____

Combining Like Terms

$8x + 5y + {}^{-}17x = -9x + 5y$

1. $9x + 4x =$
2. $17x + x =$
3. $m + ({}^{-}4m) =$
4. ${}^{-}7x - 8x =$
5. $14a - 19a =$
6. $-a + 9a =$
7. $6xy + 5xy =$
8. ${}^{-}9m - m =$
9. $15a + ({}^{-}11a) =$
10. ${}^{-}14x + 13x =$
11. $5x^2y + 13x^2y =$
12. $21xy + ({}^{-}9xy) =$
13. $17x + 1 =$
14. $3.5y - 7.2y =$
15. ${}^{-}4.7y - 2.3y =$
16. $3a + 5c - 9a =$
17. $2x - 9x + 7 =$
18. $7x - 8 - 11x =$
19. $3x - 3y - 9x + 7y =$
20. $17x + 4 - 3x =$
21. $3x - 7y - 12y =$
22. $11a - 13a + 15a =$
23. $17x + 5a - 3x - 4a =$
24. $6x + 9y + 2x - 8y + 5 =$
25. $3xy + 4xy + 5x^2y + 6xy^2 =$
26. ${}^{-}25y - 17y + 6xy - 3xy =$

0-7424-1788-3 Algebra

Name _____ Date _____

Plotting Points

Connect each of the following ordered points.

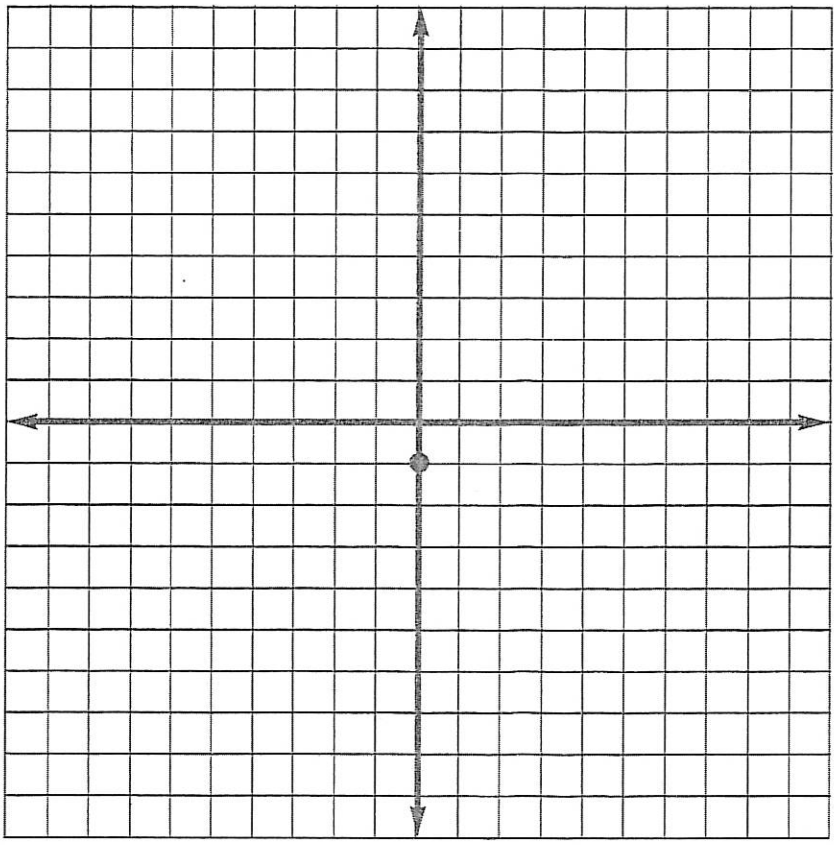
$(x, y) = (0, -1)$

- vertical move ⟹ down one
- horizontal move ⟹ no move

"Ancient History"

Start at (0, -1)

(1, -1)	(0, 3)
(1, -3)	(-1, 4)
(3, -3)	(-2, 3)
(3, -1)	(-3, 4)
(5,0)	(-4, 3)
(8,0)	(-5, 1)
(7,1)	(-8, 2)
(9,0)	(-5, 0)
(8,2)	(-3, -1)
(5,1)	(-3, -3)
(4,3)	(-1, -3)
(3,4)	(-1, -1)
(2,3)	(0, -1)
(1, 4)	End

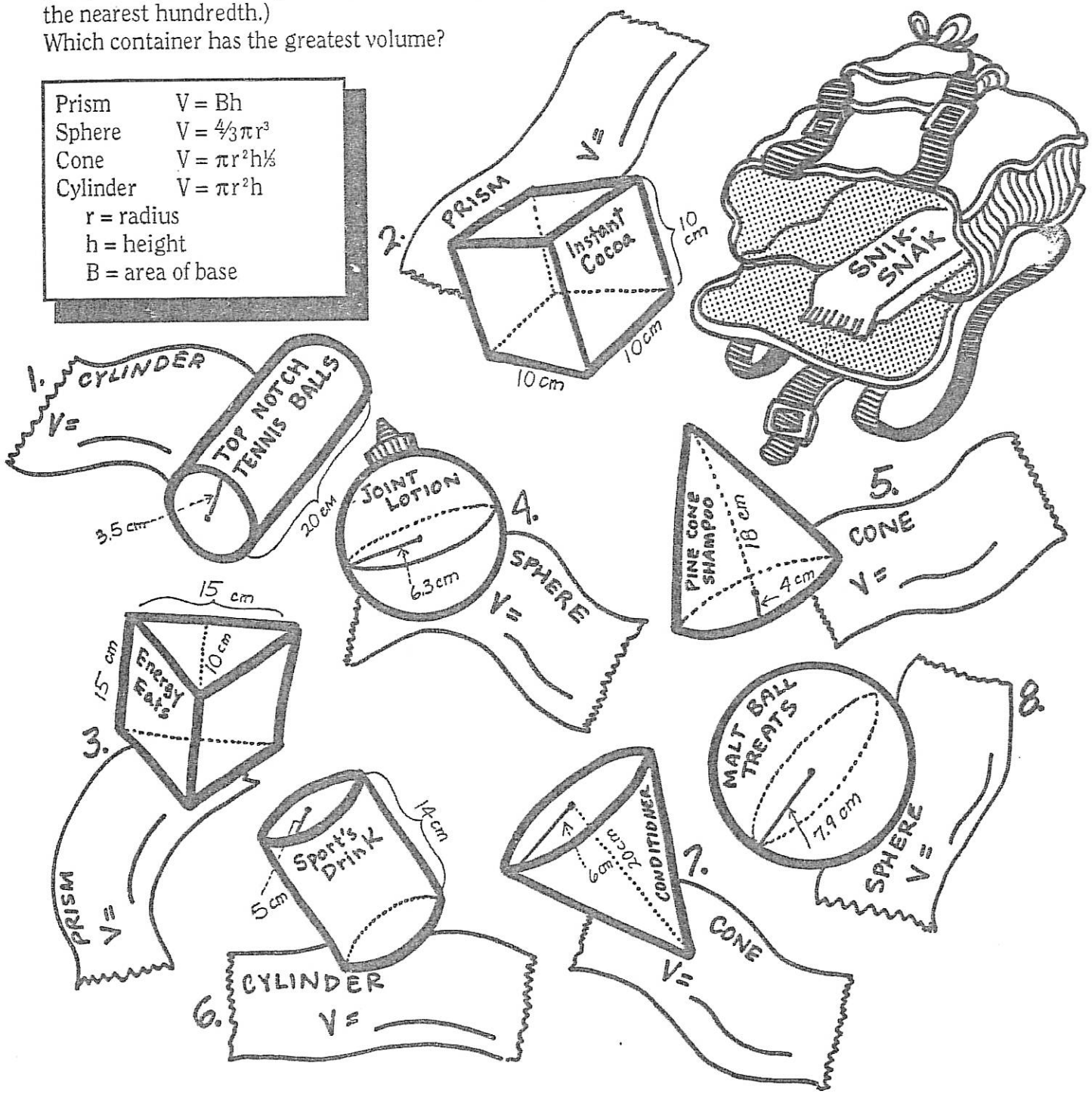


0-7424-1787-5 *Pre-Algebra*

DUFFEL BAG MATH

If you snooped inside the duffel bag of this Olympic athlete, you would find some containers that are space figures. Identify each space figure by name, then find its volume. (Round each answer to the nearest hundredth.)
Which container has the greatest volume?

Prism	$V = Bh$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \pi r^2 h \frac{1}{3}$
Cylinder	$V = \pi r^2 h$
r = radius	
h = height	
B = area of base	



Name

Name: _____ Date: _____

Skill: Applying appropriate techniques, tools, and formulas to determine measurements

Unit 3: Measurement: *Practice Activity 6*

Just a Tip: To find the **surface area** of a cylinder, you can break the problem down into three parts: finding the area of the top base, the bottom base, and the curved surface of the cylinder. To find the area of the bases, just use the formula to find the area of a circle: $A = \pi r^2$. To find the area of the curved surface, take the circumference of one of the bases and multiply it times the height of the cylinder. Then, add all three areas together to get the total surface area.

Example:

Area of base = $3.1416 \cdot 1.5^2 = 7.0686$ in.^{2}
Circumference of base = $(2 \cdot 1.5) \cdot 3.1416 = 9.4248$ in.^{2}
Area of curved side = $9.4248 \cdot 8 = 75.3984$ in.^{2}
Surface area = $7.0686 + 7.0686 + 75.3984 = 89.5356$ in.^{2}

Find the surface area of each cylinder. Round answers to the nearest hundredths, if necessary.

1. _____

2. _____

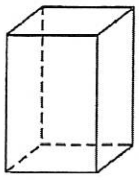
3. _____

4. _____

5. _____

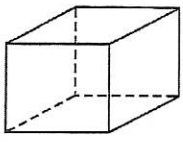
Just a Tip: The formula for finding surface area for a prism is $SA = ph + 2B$. Multiply the perimeter (p) of the base figure times the height (h) of the prism. Then, multiply the area of the base (B) times two. Finally, add those two numbers together.

Example: $SA = (6 \cdot 3) + (2 \cdot 2) = 22$ square inches.

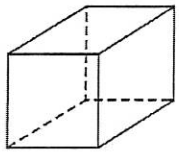


Find the surface area for each prism.

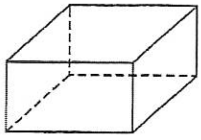
6. _____



7. _____



8. _____



SEEING DOUBLE

Synchronized swimming was added to the Summer Olympic Games in 1984. When watching duet synchronized swimming, you think you are seeing double! Look at the geometric figures below and decide if you are seeing double (or congruent shapes) or just two shapes that are similar!

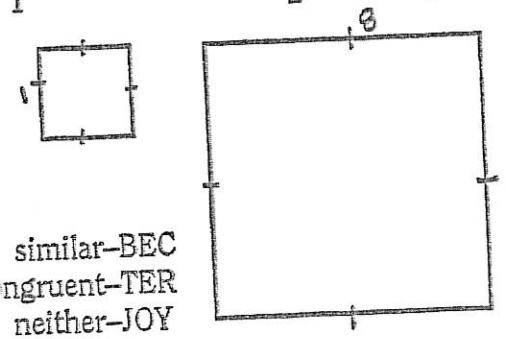
Congruent polygons are exactly the same. **Similar polygons** have the same shape. Their corresponding angles are congruent and their corresponding sides are proportional.

Place the letters after each correct answer on the corresponding blanks below to discover the only American in 20 years to win all 3 synchronized swimming events at a World Championship.

____ ____ ____ ____ ____ ____

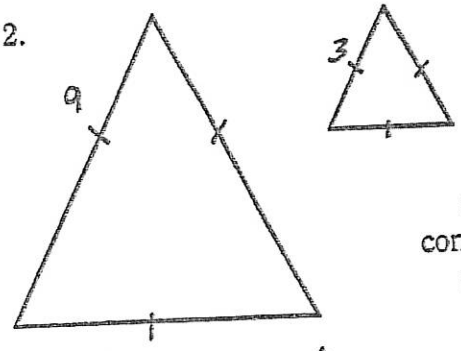
1 2 3 4 5 6

1.



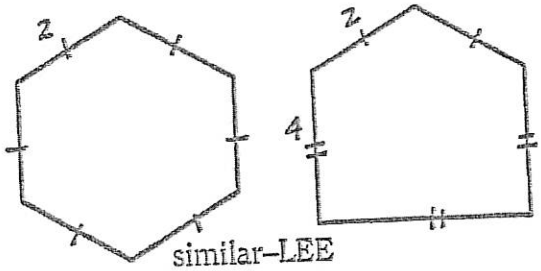
similar–BEC
congruent–TER
neither–JOY

2.



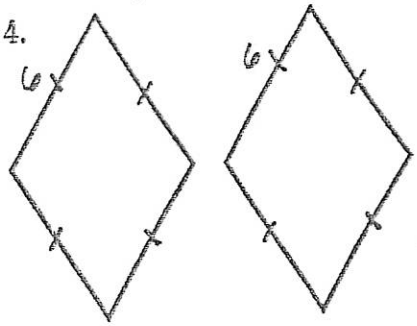
similar–KY
congruent–RI
neither–LYNN

3.



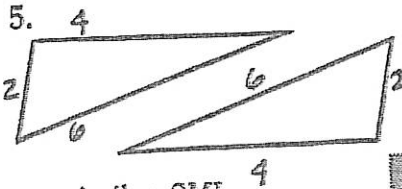
similar–LEE
congruent–JER
neither–DYR

4.

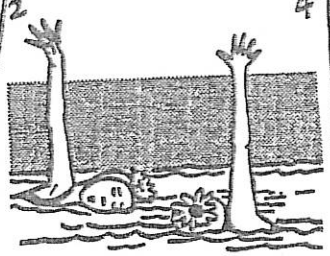


similar–ANN
congruent–OEN
neither–AN

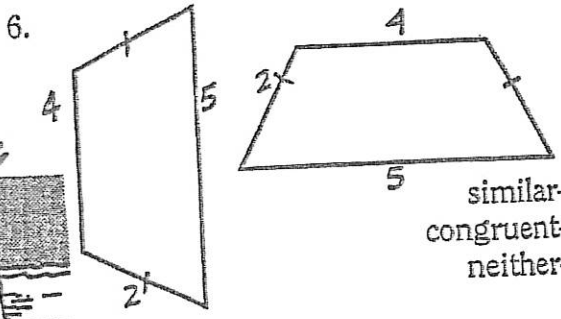
5.



similar–SMI
congruent–LAN
neither–JON



6.



similar–TH
congruent–CER
neither–ES

Name

Name _____ Date _____

What's Not to Like?

Simplify each expression by combining like terms. Circle the expression in each problem that does not belong. Place the letter above the problem number below.

1. A. $5t + 3r + 9t - 10r$	E. $r + t - 8r + 13t$	I. $-r + 4t + 10t + 8r$
2. D. $12x - 3y + x + 2y$	E. $3(4x - 3y) + x + 3y$	F. $4(4x - 2y) - 3x + 7y$
3. E. $4(y - 7x) - y$	I. $^-30x - (^-2x)$	O. $^-7(4x + y) + 7y$
4. U. $6(x - y) - 3(3x + y)$	V. $3(3x - y) - 6y$	W. $4x + y - 7x - 10y$
5. Q. $3(r - 1) - 4r + 5$	X. $2(3 - 2r) - 4(2 - r)$	Z. $-r + 7 + 3r - 9 - 2r$
6. L. $8(x + y) + 3(x + y)$	M. $10(x + y) + x + y$	N. $9(x + y) - 2(x + y)$
7. A. $3(2b - a) - (2a - b)$	B. $3(a + 2b) - (b + 2a)$	C. $2(a + 2b) - (a - b)$
8. I. $^-5(a - b) - 2(a - b) + 8(a - b)$	U. $6(a - b) - 4(a - b) + (a - b)$	O. $(a - b) - (a - b) + (a - b)$
9. R. $3(x - y) - 2(y - x)$	S. $2(x - y) - 3(y - x)$	T. $3(y - x) - 2(x - y)$
10. L. $^-4(x + 2(5xy - x))$	M. $^-4(x + 5(^-3xy + x))$	N. $^-2(3x + 3(^-10xy + 3x))$

Two expressions in each problem are

2	5	8	1	4	7	10	3	6	9

Name _____ Date _____

... More Mixed Practice with Fractions

1. $8\frac{1}{15} - 5\frac{11}{20} =$

2. $3\frac{1}{9} + 8\frac{3}{7} + 1\frac{1}{3} =$

3. $1\frac{7}{8} \cdot 3\frac{3}{5} =$

4. $4\frac{4}{5} \div 2\frac{8}{10} =$

5. $3\frac{5}{12} + 5\frac{1}{4} - 2\frac{7}{20} =$

6. $(\frac{16}{21} \cdot 3\frac{1}{4}) \div 6\frac{1}{3} =$

7. $5\frac{7}{10} - (\frac{25}{27} \div 3\frac{1}{3}) =$

8. $(2\frac{15}{24} \div 3\frac{11}{12}) \cdot 6\frac{1}{2} =$

9. $7\frac{3}{12} - 2\frac{8}{9} =$

10. $1\frac{1}{6} \cdot 3\frac{5}{7} \cdot 2\frac{2}{9} =$

11. $8\frac{7}{12} + 11\frac{3}{4} =$

12. $7 - (3\frac{7}{9} \div 4\frac{2}{3}) =$

13. $2\frac{1}{2} \cdot 3\frac{3}{15} =$

14. $5\frac{2}{9} - 2\frac{17}{18} + 1\frac{2}{3} =$

15. $(3\frac{6}{8} \div 4\frac{2}{4}) - \frac{13}{16} =$

16. $4\frac{2}{3} \cdot 1\frac{3}{4} \cdot 3\frac{3}{4} =$

17. $3\frac{4}{15} \div 8\frac{3}{45} =$

18. $12\frac{1}{2} - 7\frac{15}{16} =$

19. $(1\frac{12}{13} \cdot 7\frac{3}{5}) - 3 =$

20. $2\frac{1}{8} \div (6\frac{2}{3} \div 8\frac{4}{9}) =$

21. $3\frac{1}{3} \cdot 7\frac{5}{6} \cdot 2\frac{2}{5} =$

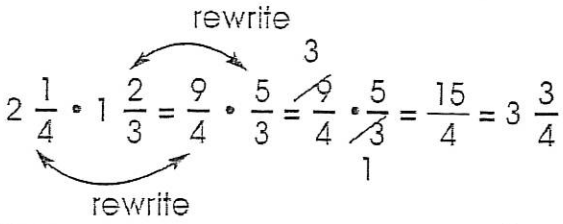
22. $1\frac{15}{16} + 3\frac{7}{24} + 3\frac{11}{12} =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Multiplying Fractions

Multiply numerators. Multiply denominators. Reduce to lowest terms.
Hint: Rewrite mixed numbers as improper fractions.



1. $\frac{1}{2} \cdot \frac{5}{6} =$

2. $3 \cdot \frac{1}{2} =$

3. $\frac{2}{5} \cdot \frac{1}{3} =$

4. $\frac{16}{5} \cdot \frac{25}{27} =$

5. $\frac{8}{21} \cdot 2\frac{7}{16} =$

6. $1\frac{5}{7} \cdot 2\frac{1}{4} =$

7. $5\frac{7}{8} \cdot 4 =$

8. $\frac{5}{7} \cdot \frac{7}{5} =$

9. $3\frac{2}{3} \cdot \frac{17}{22} =$

10. $\frac{5}{6} \cdot 2 =$

11. $8\frac{1}{3} \cdot \frac{3}{4} =$

12. $4\frac{1}{4} \cdot 3\frac{1}{5} =$

13. $2\frac{1}{6} \cdot \frac{18}{20} =$

14. $\frac{21}{35} \cdot 3\frac{4}{7} =$

15. $1\frac{3}{5} \cdot 2\frac{3}{16} =$

16. $6\frac{3}{4} \cdot 1\frac{5}{9} =$

17. $3\frac{1}{3} \cdot 1\frac{3}{18} =$

18. $\frac{1}{2} \cdot \frac{6}{11} \cdot \frac{3}{5} =$

0-7424-1787-5 Pre-Algebra

Name _____ Date _____

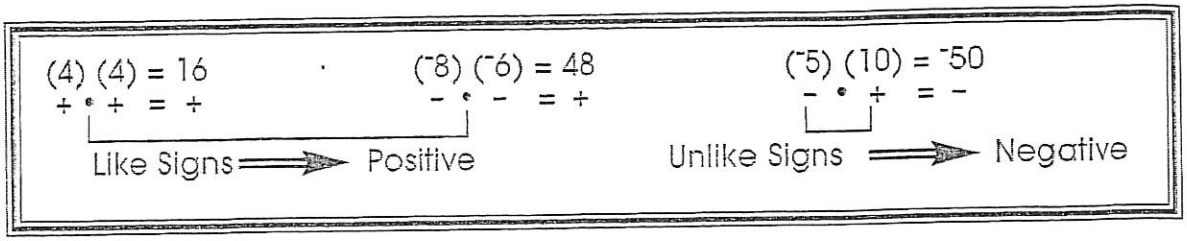
Mixed Practice with Integers

1. $^-41 + ^-125 =$
2. $79 - 88 =$
3. $^-3 \cdot ^-4 =$
4. $\frac{^-125}{5} =$
5. $19 \cdot ^-24 =$
6. $\frac{^-123}{41} =$
7. $82 + ^-95 =$
8. $27 - ^-46 =$
9. $^-31 - ^-32 =$
10. $\frac{^-825}{^-33} =$
11. $^-34 + 52 + ^-18 =$
12. $14 \cdot ^-12 \cdot 3 =$
13. $\frac{^-185}{5} \cdot -4 =$
14. $76 - 19 + ^-60 =$
15. $17 - ^-12 - 22 =$
16. $100 \cdot ^-4 \cdot 40 =$
17. $\frac{54}{^-9} + \frac{33}{11} + \frac{24}{8} =$
18. $^-51 \div 17 =$
19. $4 - 8 + ^-9 =$
20. $-\frac{98}{49} \cdot ^-10 =$
21. $(256 \div ^-16) \cdot ^-3 =$
22. $(^-18 - ^-26 + ^-13) \cdot ^-2 =$
23. $(202 + ^-196 - 321) \div ^-5 =$
24. $(\frac{^-575}{23} - 18) \cdot ^-11 =$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Multiplying Integers



1. (⁻3) (⁻6) =
2. (14) (⁻4) =
3. (25) (2) =
4. (20) (⁻49) =
5. (75) (15) =
6. (⁻30) (⁻30) =
7. (⁻17) (23) =
8. (⁻218) (⁻32) =
9. (801) (⁻37) =
10. (⁻89) (⁻321) =
11. (31) (⁻31) (31) =
12. (⁻4) (⁻18) (28) =
13. (⁻53) (⁻14) (⁻7) =
14. (32) (125) (11) =
15. (⁻37) (⁻18) (⁻5) (2) =
16. (111) (⁻63) (19) =
17. (20) (⁻7) (35) (⁻3) =
18. (16) (⁻8) (⁻10) (⁻1) =
19. (⁻9) (⁻29) (32) (2) =
20. (⁻18) (⁻6) (⁻21) (⁻30) =

0-7424-1787-5 *Pre-Alge*

Name _____ Date _____

Mixed Practice

1. $4x - 7 = 2x + 15$
2. $^-4 = {}^-4(f - 7)$
3. $5x - 17 = 4x + 36$
4. $3(k + 5) = {}^-18$
5. $y + 3 = 7y - 21$
6. $^-3(m - 2) = 12$
7. $18 + 4p = 6p + 12$
8. $^-8\left(\frac{a}{8} - 2\right) = 26$
9. $^-3k + 10 = k + 2$
10. $22 = 2\,(b + 3)$
11. $6a + 9 = {}^-4a + 29$
12. $^-22 = 11(2c + 8)$
13. $10p - 14 = 9p + 17$
14. $^-45 = 5\left(\frac{2a}{5} + {}^-3\right)$
15. $16z - 15 = 13z$
16. $36 + 19b = 24b + 6$
17. $144 = {}^-16\,(3 + 3d)$
18. $11h - 14 = 7 + 14h$
19. $^-3\left(\frac{2j}{3} - 6\right) = 32$
20. $^-43 - 3z = 2 - 6z$

0-7424-1787-5 Pre-Algebra

Name _____ Date _____

Solving Equations with Negative Variables

$$\frac{-k}{6} + 1 = -5$$

$$\frac{-k}{6} + 1 - 1 = -5 - 1$$

$$\frac{-k}{6} \cdot 6 = -6 \cdot 6$$

$$-k = -36$$

$$k = 36$$

1. $-8 - y = 22$

2. $18 = -k + 3$

3. $4 - \frac{x}{5} = -16$

4. $-x - 15 = -15$

5. $-z = 11$

6. $-28 = \frac{-y}{4} - 12$

7. $-82 = -a$

8. $\frac{-b}{3} + 50 = 100$

9. $-6 - x\frac{1}{9} = -18$

10. $-3z + 5 = 38$

11. $-a\frac{1}{2} + 12 = -9$

12. $-5y - -7 = 52$

0-7424-1787-5 *Pre-Algebra*

Name _____ Date _____

Solving Equations with Two Operations

$$2y - 7 = -29$$
$$2y - 7 + 7 = -29 + 7$$
$$2y = -22$$
$$\frac{2y}{2} = \frac{-22}{2}$$
$$y = -11$$

1. $13 + -3p = -2$

2. $\frac{-5a}{2} = 75$

3. $6x - 4 = -10$

4. $9 = 2y + 9$

5. $-10 + \frac{a}{4} = 9$

6. $17 = 5 - x$

7. $-7r - 8 = -14$

8. $\frac{4y}{3} = 8$

9. $16 + \frac{x}{3} = -10$

10. $\frac{-4z}{5} = -12$

11. $-22 = 3s - -8$

12. $-\frac{a}{6} - -31 = 64$

Name _____ Date _____

Adding and Subtracting Integers

1. $^{-}6 + {}^{-}8 =$
2. $^{-}10 - 3 =$
3. $^{-}14 + 20 =$
4. $31 - {}^{-}9 =$
5. $^{-}17 + 9 =$
6. $^{-}8 - {}^{-}27 =$
7. $^{-}33 - 36 =$
8. $19 + {}^{-}32 =$
9. $112 - {}^{-}52 =$
10. $8 - {}^{-}7 =$
11. $24 + {}^{-}24 =$
12. $508 - 678 =$
13. $^{-}23 - {}^{-}28 =$
14. $0 - 31 =$
15. $^{-}40 - 35 =$
16. $73 + {}^{-}19 =$
17. $^{-}231 - {}^{-}231 =$
18. $^{-}107 + {}^{-}293 =$
19. $52 + {}^{-}41 - 60 =$
20. $^{-}85 - {}^{-}106 + 18 =$
21. $81 - 165 - {}^{-}75 =$
22. $^{-}16 + 312 + {}^{-}621 =$
23. $^{-}121 + {}^{-}632 - {}^{-}11 =$
24. $^{-}553 - {}^{-}632 + {}^{-}85 =$

0-7424-1787-5 *Pre-Algebra*