

# Level A1 Review Packet

This packet *briefly* reviews the topics covered on the Level A1 Math Skills Assessment.

## Decimal Addition and Subtraction

1) $19.017 + 2.88$	2) $4.13 + 21.21$
3) $30.69 - 29.18$	4) $12.02 - 6.069$

## Decimal Multiplication and Division

1) $5.4 \times 5.05$	2) $0.6643 \times 2$
3) $3.82 \div 2$	4) $4.131 \div 100$

## Order of Operations

1) Simplify the expression below. $12 - 6 \cdot (5 + 2^3)$	2) Simplify the expression below. $12 \div 6 \cdot 4^2 - 12 + 2$
3) Simplify the expression below. $2 \cdot 7 + 3^3 - 4 \div 2$	4) Simplify the expression below. $4 + 2^3 \cdot (4^2 - 9)$

### Fraction Addition and Subtraction

1)  $\frac{4}{7} + \frac{1}{2}$

2)  $\frac{3}{5} + \frac{2}{3}$

3)  $\frac{2}{5} + \frac{1}{9}$

4)  $6 - \frac{4}{5}$

5)  $3\frac{2}{3} + \frac{5}{8}$

6)  $\frac{1}{3} + 1\frac{2}{5}$

7)  $6\frac{5}{8} - \frac{2}{3}$

8)  $5\frac{7}{8} - \frac{5}{16}$

### Fraction Multiplication and Division

1)  $\frac{4}{7} \cdot \frac{1}{2}$

2)  $\frac{3}{5} \cdot \frac{2}{3}$

3)  $\frac{2}{5} \div \frac{1}{9}$

4)  $6 \div \frac{4}{5}$

5) $3\frac{2}{3} \cdot \frac{5}{8}$	6) $\frac{1}{3} \cdot 1\frac{2}{5}$
7) $6\frac{5}{8} \div \frac{2}{3}$	8) $5\frac{7}{8} \div \frac{5}{16}$

### Converting Fractions to Decimals and Percents

1) Convert $\frac{3}{4}$ to a decimal and a percent.	2) Convert $\frac{4}{5}$ to a decimal and a percent.
3) Convert $\frac{3}{8}$ to a decimal and a percent.	4) Convert $\frac{1}{8}$ to a decimal and a percent.

### Ordering Fractions by Magnitude

1) Which of these fractions is the largest?  $\frac{1}{2}$ $\frac{3}{8}$ $\frac{4}{7}$ $\frac{19}{36}$	2) Which of these fractions is the smallest??.  $\frac{1}{10}$ $\frac{1}{8}$ $\frac{1}{7}$ $\frac{1}{36}$
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### Evaluating Expressions

1) Evaluate $a - b(a - x)^2$ if $a = -1, b = -2$ and $x = 3$ .	2) Find the value of $a^2b - 2a - 2c$ when $a = -3, b = 4$ and $c = -5$ .
3) Find the value of $3a^2 - 2bc + c^2$ when $a = -3, b = 4$ and $c = -5$ .	4) Find the value of $\frac{x}{3} + 4x^2 - 5y$ when $x = -3, y = 2$ .

### Solving Equations

1) Solve for x: $5x - 2 + 3x = -26$	2) Solve for x: $3(2x - 3) + 5 = 20$
3) Solve for x: $-7 = 3(2x + 1)$	4) Solve for x: $3(5x - 6) + 6 = 13$
5) Solve for x: $7x - 8 = 2(3 + 2x) + 4$	6) Solve for x: $\frac{2x}{5} + 4 = -6$
7) Solve for x: $10 + \frac{x}{3} = 23$	8) Solve for x: $\frac{1}{2}x + 6 = 10$

### Solving Proportions

1)  $\frac{4}{3} = \frac{k}{9}$

2)  $\frac{3}{x} = \frac{4}{8}$

3)  $\frac{12}{9} = \frac{y}{12}$

4)  $\frac{z}{8} = \frac{7}{2}$

### Solving Inequalities

1) Solve:  $14 \geq 3x + 2$

2) Solve:  $2x - 4 \geq -2$

3) Solve:  $2(x - 4) - 3 > 21$

4) Solve:  $9 > 7 - 4x$

### Writing Expressions

1) Write an algebraic expression that represents "six less than half a number, x?"

2) Dawn is 3 years older than her sister Sara. If Dawn's age is represented by x, which expression represents Sara's age?

3) Cindy has four more than five times as many cousins as Kathy, k. Write an expression that represents how many cousins Cindy has compared with Kathy?

4) Sarah collects stamps and keeps them in envelopes. She had 9 envelopes with a certain number of stamps, s, in each envelope. She sells 3 of the envelopes. Find an expression that represents the number of stamps Sarah has left.

**Proportional Reasoning**

1. An art teacher mixes 20 ounces of yellow paint with 8 ounces of red paint. How many ounces of yellow paint would she need to mix with 18 ounces of red paint to maintain the same proportion?
2. Carlos burns 75 calories for every 15 minutes he walks. How many calories will Carlos burn if he walks for 45 minutes?
3. Carlos burns 75 calories for every 15 minutes he walks. Carlos wants to burn 300 calories. How many minutes must Carlos walk in order to burn 300 calories?
4. On the city map, 1 inch represents  $\frac{1}{2}$  mile. How many inches represent  $3\frac{1}{4}$  miles?
5. Ellen buys 24 ounces of green beans at the grocery store. The green beans cost \$1.90 per pound. How much does she pay for the green beans, before tax? (1 pound = 16 ounces)
6. A certain recipe calls for 2 cups of milk for every 3 cups of flour. If 2 cups of flour are used, how many cups of milk should be used?

**Problems Involving Fractions**

1. Bonita bought  $2\frac{1}{5}$  kg of potatoes and  $1\frac{1}{2}$  kg of carrots. How much more potatoes than carrots did she buy?
2. A carpenter made shelves of length  $3\frac{1}{4}$  ft. and  $3\frac{1}{8}$  ft. If his board was  $8\frac{1}{2}$  ft long, how many feet of board did he have left over?
3. From a piece of ribbon  $12\frac{1}{2}$  inches long, a piece  $5\frac{3}{4}$  inches long is cut. How many inches of ribbon are left?
4. Joan's room requires  $20\frac{1}{4}$  square yards of carpeting and Sam's room requires  $17\frac{7}{8}$  square yards of carpeting. How many more yards of carpeting does Joan's room require?
5. To roast a turkey for Thanksgiving dinner, Juliette's recipe calls for  $\frac{3}{4}$  of an hour cooking time per pound. If her turkey weighs  $12\frac{1}{2}$  pounds, how many hours should she cook her turkey?
6. About  $\frac{1}{3}$  of the land on the earth can be used for farming. Grain crops are grown on about  $\frac{2}{5}$  of this land. What part of the earth's land is used for growing grain crops?

7. Mrs. Meier had  $\frac{3}{5}$  kg of sugar. She used  $\frac{1}{4}$  of it to make cookies. How much sugar did she use to make the cookies?

8. Natalie cuts a raffia  $4\frac{4}{5}$  m long into 8 pieces of equal length. What is the length of each piece of raffia? Give the answer in meters.

9. Four friends evenly split  $6\frac{1}{2}$  liters of soda. How many liters of soda does each one get?


10. If  $\frac{1}{4}$  of a container holds 6 cups of water, how many cups of water does  $\frac{1}{8}$  of the same container hold?

11. The length of a page in a particular book is 8 inches. The top and bottom margins are both  $\frac{7}{8}$  inch. How long is the page *inside* the margins, in inches?

12. Lauren spent  $\frac{3}{5}$  of her money on a refrigerator that cost \$900. How much money did Lauren start with?



## Problems Involving Percents

1. The Red Sox team played 160 games and won 65% of them. How many games did they win?
2. A basketball player took 400 shots during a season and scored on 40% of them. How many baskets did she score?
3. A gasoline tank holds 20 gallons. If the tank is already 25% full, how many gallons of gasoline are needed to fill the tank?
4. When the local department store put all of its shirts on sale for 20% off, Jason saved a total of \$30 by purchasing four shirts. What was the total price of the four shirts before the sale?  
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5. Twelve students participated in a science competition to represent Montana State University. If they are 15% of the total number of science majors, how many students are majoring in science at MSU?

6. If 6 feet of a 30-foot pole are underground, what percent of the pole's length is above the ground?

7. Stacy won 8 of the 20 tennis games she played. What percent of the games did she win?

8. If 320 out of 500 families in a city have computers, what percentage of the families has computers?

9. Mr. Jenkins wants to distribute 40 fliers. He has distributed 30 fliers so far. What percent of the total number of fliers has Mr. Jenkins distributed?

10. If  $\frac{3}{5}$  of John's stamps are Canadian stamps, what percentage of his stamps are Canadian stamps?