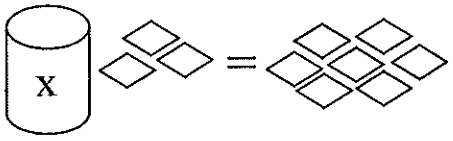
Semester 1 Exam Review-Part 1

1. Which one Doesn't Belong? Identify the equation that does not have the same solution as the other three. Explain your reasoning.

$x - 1 = -3$	$b + 5 = -7$	$10 + y = 8$	$-6 + a = -8$
$x = -2$	$b = -12$	$y = -2$	$a = -2$

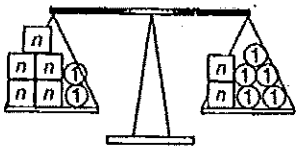
The model represents the equation x + 3 = 7.



2. How can you determine the value of x?

A Add three beans to each side.
B Subtract seven beans from each side.
C Subtract three beans from each side.
D Add seven beans to each side.

3. What is the first step in finding the value of *n* in this model?



A Divide the number *n*'s on one side by the number on the other side.
B Take away as many *n*'s on one side as there are 1 units on the other side.
C Subtract two 1 units from both sides of the model.
D Divide the number of units on one side by the other side.

Fill in the blank.

4. The goal for solving equations is to find the value of the variable.

5. To do this we need to isolate the variable.
* Use inverse operations

Solve. 2 step: Reverse order of operations

6. $2x + 3 = 11$
$-3 \quad -3$
$2x = 8$
$x = 4$

7. $5 + 4x = 105$
$-5 \quad -5$
$4x = 100$
$x = 20$

8. $32 = 6x - 4$
$+4 \quad +4$
$36 = 6x$
$x = 6$

Write an equation for each situation and solve

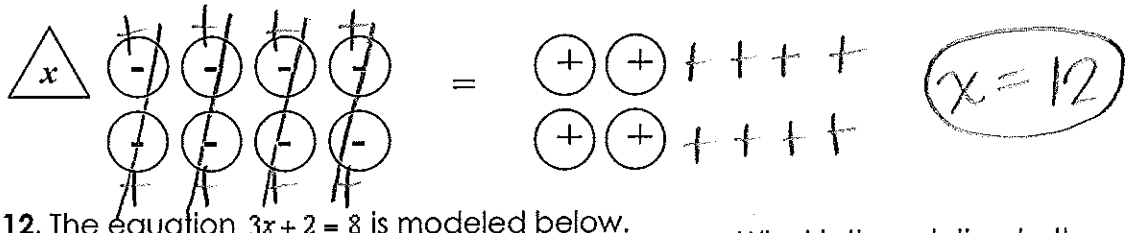
9. It costs $12 at attend a golf clinic at a local pro shop. Buckets of balls for practice cost $3 each. How many buckets can you buy if you have $30 to spend?

$3x + 12 = 30$
$-12 \quad -12$
$\frac{3x}{3} = \frac{18}{3}$
$x = 6$

10. Caitlin has a $10 gift certificate to the music store. She has chosen a number of CD's from the $7 bargain bin. If the cost of the CD's is $32 after the gift card is credited, how many CD's did she buy?

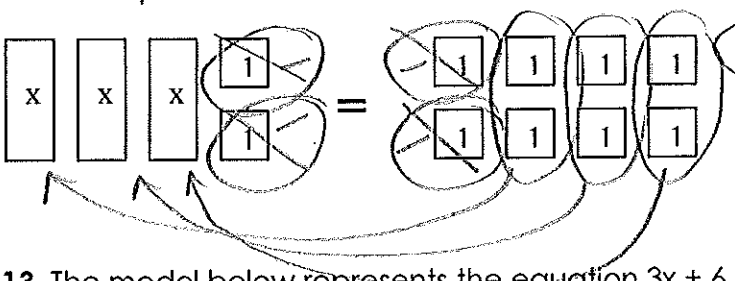
$7x - 10 = 32$
$+10 \quad +10$
$\frac{7x}{7} = \frac{42}{7}$
$x = 6$

11. What is the value of x in the model represented below?



$x = 12$

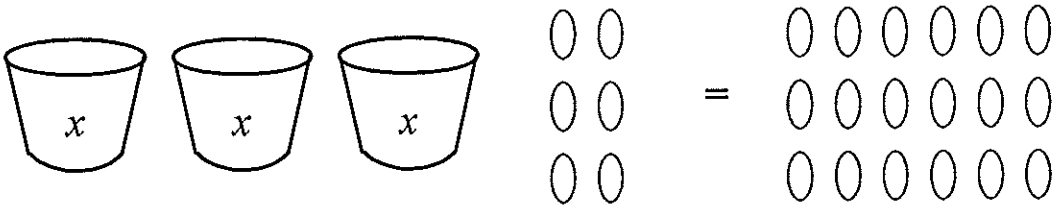
12. The equation $3x + 2 = 8$ is modeled below.



What is the solution to the equation?

a. x = 2
b. x = -2
c. x = 6
d. x = -6

13. The model below represents the equation 3x + 6 = 18.



What is the first step in finding the value of x?

a. Divide the beans evenly among the 3 cups.
b. Add 18 beans to each side of the model
c. Add 6 beans to each side of the model
d. Subtract 6 beans from each side of the model

Write an *expression* or *equation* to represent the phrase or sentence below.

14. Eight less than n is 28. $n - 8 = 28$

15. n subtracted from -7 $-7 - n$

16. -5 subtracted from n $n - (-5)$

17. ¼ of n is 15. $\frac{1}{4}n = 15$

Evaluate each expression if a = 4 and b = 3.

18. $9a - 6b$

$9 \cdot 4 - 6 \cdot 3$

$36 - 18$

18

19. $\frac{ab}{2}$

$\frac{4 \cdot 3}{2} = 6$

20. $2a^2 + 5$

$2 \cdot 4^2 + 5$

$2 \cdot 16$

$32 + 5$

37

21. $a + -7$

$4 + (-7)$

-3

22. $b - (-3)$

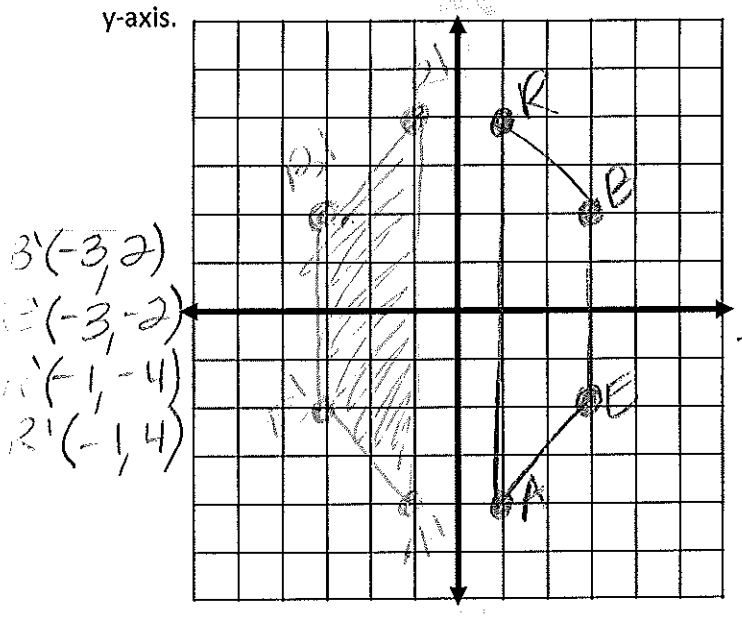
$3 + (+3)$

6

Semester 1 Exam Review-Part 2

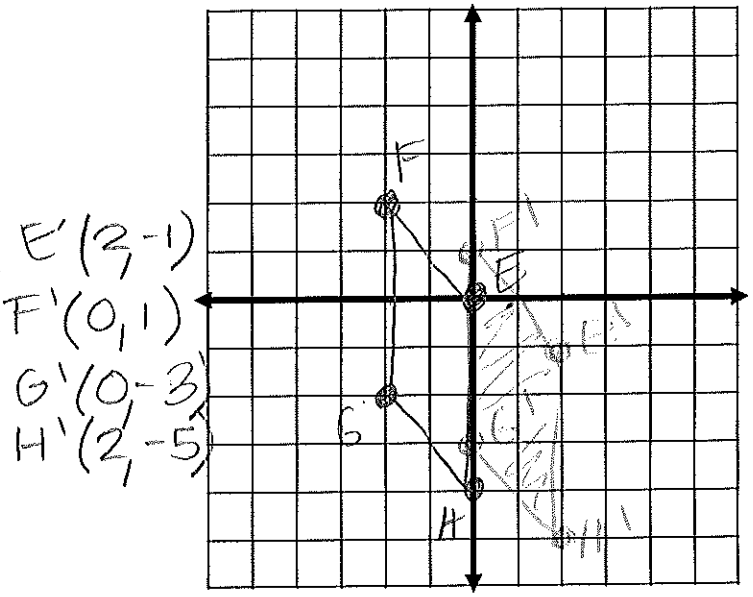
Coordinate Graphing
Evaluating Expressions and Writing Equations

1) The vertices of quadrilateral *BEAR* are B(3, 2), E(3,-2), A (1, -4) and (1,4). **Graph** B'E'A'R' as a reflection over the y-axis.



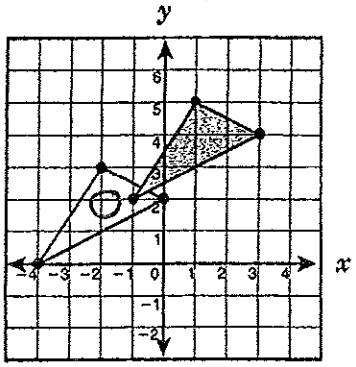
List the vertices of your new image.

2) **Graph** parallelogram *EFGH* with vertices *E*(0,0), *F*(-2,2), *G*(-2,-2) and *H*(0,-4). Translate the figure using the rule (x +2, y -1). Label your new figure *E'F'G'H'*.



List the vertices of your new image.

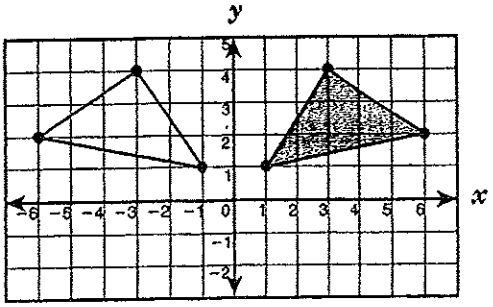
3.



Transformation: translation (slides)

Movement: (x+3, y+2)

4.



Transformation: reflection (flips)

Movement: over the y-axis

Write an expression to represent the phrase below.
Evaluate if n = -2 and m = 2.

5) The product of 7 and n. $7n$ $(7 \cdot -2 = -14)$

6) -4 divided by n $\frac{-4}{n}$ $(\frac{-4}{-2} = 2)$

7) -7 subtracted from n $n-(-7)$ $(-2+7=5)$

Write the equation that matches the phrase.

8) -4 combined with n is -9 $-4+n=-9$

9) 5.5 less than b is 10 $b-5.5=10$

10) n more than .04 is 4.04 $n+.04=4.04$

11) m divided by 6 is 24 $\frac{m}{6}=24$

Semester 1 Exam Review-Part 3

Fraction, Decimal, & Percent Conversions

1) 2 out of every 3 students polled said they had a facebook account. What is that amount written as a decimal and as a percent?

A 2.3, 2.33% B 0.6, 60%
C $0.16\overline{6}$, $1.66\overline{6}\%$ D $0.66\overline{6}$, $66.\overline{6}\%$

$\frac{2}{3} = 3\overline{)2.000} = .66\overline{6} = 66.\overline{6}\% = 66\frac{2}{3}\%$

2) Choose the decimal that would be between $\frac{1}{8}$ and $\frac{1}{2}$.

A) 0.12 B) 0.38 C) 0.5 D) 0.61

.125 → .500

Compare using >, <, =.

3) $\frac{7}{50}$ < 0.40 4) $\frac{9}{15}$ = 0.60 5) $\frac{1}{5}$ > $0.16\overline{6}$

$.14\frac{14}{100}$ $.60 = \frac{3}{5}$ $.2 = \frac{1}{5}$

Write each fraction or mixed number as a decimal and a percent.

6) $\frac{1}{20} = \frac{5}{100}$ 5% .05 7) $1\frac{15}{30} = 1\frac{1}{2}$ 150% 1.5 8) $\frac{7}{4} = 1\frac{3}{4}$ 175% 1.75

Write each decimal as a fraction or mixed number and a percent. * SAY IT, WRITE IT, SIMPLIFY IT!

9) 0.8 $\frac{8}{10} = \frac{4}{5} = 80\%$ 10) 0.55 $\frac{55}{100} = \frac{11}{20}$ 55% 11) 1.15 $\frac{15}{100} = 1\frac{3}{20} = 115\%$

12) $\frac{4}{5}$ of all McDonald's customers order a soda with their meal.

What percent of McDonald's customers do NOT order a soda with their meal?

$\frac{4}{5} = 80\%$ NOT = 20%

13) Which pair of numbers are NOT equivalent?

A) 0.4, $\frac{2}{5}$, 40% B) 0.07, $\frac{7}{10}$, 7% C) $\frac{4}{8}$, 0.5, 50% D) $\frac{6}{100}$, 0.06, 6%

14) By 3 o'clock pm on picture day, 65% of the classes had finished taking their yearbook pictures. What fraction of the students had taken their yearbook pictures by 3:00?

$\frac{65}{100} = \frac{13}{20}$

15) Order from least to greatest.

0.56 $\frac{3}{4}$ .75 $\frac{5}{10}$ .50 0.6

.56, .6, 3/4

16) Order from greatest to least

$2\frac{2}{5}$ $2\frac{3}{8}$ 2.375 $1\frac{3}{10}$ 1.30 2.35

$2\frac{2}{5}$, $2\frac{3}{8}$, 2.35, $1\frac{3}{10}$

17) George completed $\frac{3}{8}$ of his homework before baseball practice. What percent is equivalent to $\frac{3}{8}$?

$8\overline{)3.000} = .375 = 37.5\%$

Semester 1 Exam Review-Part 4

Decimal Operations

1) $\frac{1}{2} \cdot 9 \div 1.2$ → 4.5 ÷ 1.2 → 12|45. → 3.75

2) $(13.9 + 20.1) \div 0.2 + 7.1$ → 34 ÷ .2 + 7.1 → 170 + 7.1 = 177.1

3) $50 \div \frac{1}{5}$ → 50 ÷ .2 → .2|50.0 → 250

4) Sarah bought 3 cookies for $2.85 and Megan bought 4 cookies for $3.20. What is the *difference* in cost per cookies.

(S) 3|2.85 → .95 (M) 4|3.20 → .80 → .95 − .80 = .15

5) Jeffrey bought popcorn for $2.75 and a soda for $1.30.Rolando bought candy for $3.15 and lemonade for $1.25. Who spent more money and how much more was spent?

(J) 2.75 + 1.30 = 4.05
(R) 3.15 + 1.25 = 4.40
Rolando + .35

6) Alex is using string to put a border around students council posters for school. Each poster needs $\frac{9}{20}$ m of string. How many meters of string will she need to make 3.5posters?

$\frac{9}{20} = \frac{45}{100} = .45$ *send to the Right!

3.5 × .45 → 1.575m

7) George purchased 5 spiral notebooks before school started for $15.10, not including tax. If each notebook cost the same amount, what was the cost per notebook?

5|15.10 → 3.02 → $3.02

8) The perimeter of the track around Jacob's school is $\frac{7}{10}$miles. Jacob's goal is to run 3.5 miles a day. How many times must Jacob run around the track to meet his goal?

.7|3.5. → 5 → 5 laps

9) The table shows the number of minutes Steve used his cell phone each month during a four month period.

Month	Number of Minutes
January	298
February	302
March	305
April	308

Steve pays a monthly fee of $40 for a 300-minute plan plus $0.40 for each minute over 300. What is the total amount Steve paid for these four months, not including tax?

A) $120 B) $166 C) $6 D) $160

15 × .4 → 6.0 → $160

10) The average person's stride length, the distance covered by one step, is approximately $2\frac{1}{2}$ feet long. How many steps would it take the average person to travel 50.5 feet?

50.5 ÷ 2.5 = 20.2

11) 1.44 ÷ 4= .36

12) 7.28 ÷ 0.4 = 18.2

13) 33 − $18\frac{1}{2} \div 5$ → 33 − 3.7 = 29.3

14) 0.8 x 0.5 = .4 → .8 × .5 → 4.0

15) 8.5 x 0.75 = 6.375

16) 1.268 x 3 = 3.804