

Name: _____

MATH 9 FINAL EXAM REVIEW

NUMBER SENSE

- ① Which of the following is a perfect square? a perfect cube?
(They can be both or neither!)

2 8 64 27 19 1

- ② What formula(s) represent the area of a square with side length = 7 in

a) 7^2 in^2 b) $7 \text{ in} + 7 \text{ in}$ c) $(7 \text{ in})(7 \text{ in})$

d) $(7 \text{ in})^2$ e) 7^2 in

- ③ Simplify by writing as a single power

Eg, $7^4 7^2 = 7^6$

a) $3^5 3^8$ b) $3^{10} \div 3^7$ c) $(3^2)^5$

- ④ Match the vocabulary terms to the number:

Exponent
coefficient
variable

$$3x^7$$

- ⑤ Find the degree of each term and of the whole polynomial.

$$2x^4 + 5x^2y^2 + 7 + 13y^3 + 2y^2z^3$$

degree: _____ _____ _____ _____ _____

degree of polynomial: _____

⑥ Find the area of a square with side length of 6 cm.

Find the side of a square with area of 256 m^2 .

Find the volume of the cube



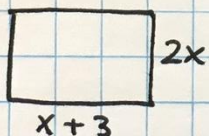
⑦ Evaluate.

a) $\left(\frac{3}{5} - \frac{1}{10}\right) \cdot 4$

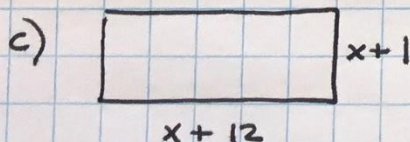
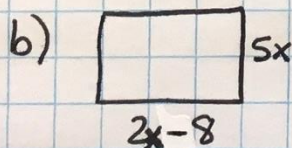
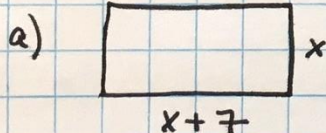
b) $3^2 - 6 \cdot 5 + 2^3$

⑧ Write an expression for the area of each rectangle.

Example:



$$A = lw = 2x(x+3) = 2x^2 + 6x$$



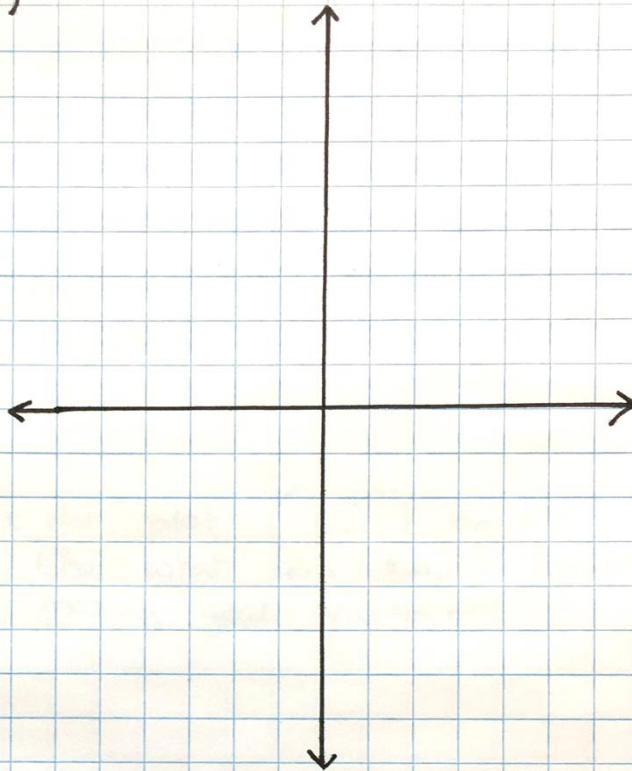
ALGEBRA (linear relations)

① Graph the lines:

a) $y = 2x + 3$

Slope: $m =$ _____

y-int: $b =$ _____



b) $y = 6$

Slope: $m =$ _____

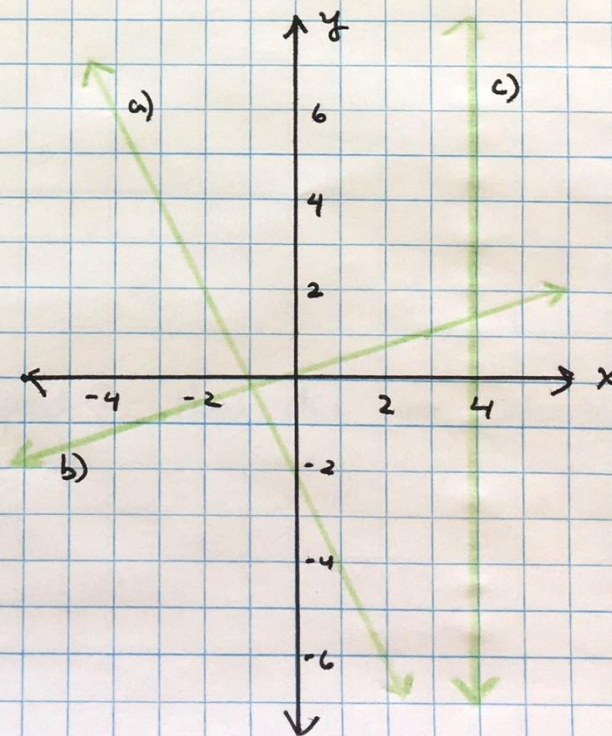
y-int: $b =$ _____

② Write the equations of the lines shown:

a)

b)

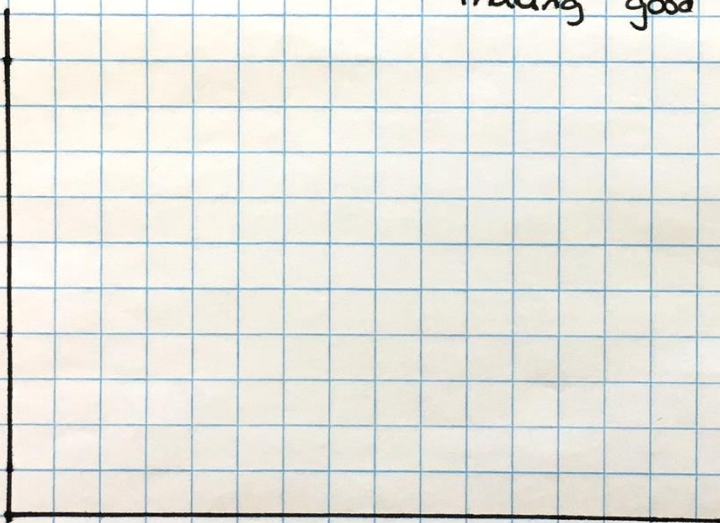
c)



③ On a trip, I record the following distances and times:

time (hr)	distance from home (km)
0	0
1.0	94
2.5	232
3.0	280
5.0	466

Graph this data as a dot plot (L:) on the set of axes below. Use what you know about making good graphs.



What is my average speed? How did you calculate it?

④ Solve for the variable.

a) $3x = 12$

b) $\frac{x}{2} = -2$

c) $x + 7 = 14$

d) $x - 1 = -6$

e) $2x + 1 = 9$

f) $-3x + 5 = 20$

g) $\frac{x}{4} + 2 = 3.5$

h) $3(x - 7) = -9$

Problem-solving and extensions

In this section, you may solve the problem any way you like — but show your work and make your answer clear.

Example. If you have 5 nickels and 6 dimes, how many different ways could you make 50¢?

# nickels		# dimes		50¢ ?
5	25	/		/
4	20	3	30	✓
3		/		/
2	10	4	40	✓
1		/		/
0	0	5	50	✓

3 different ways

Note: I did not explain all of my work, but it's not too hard to look and see how I made an organized list to test possible combinations.

① A potter makes bowls to sell at a craft fair. If it takes her 1 hour to make 1 bowl, and then 16 hours to fire and glaze a set of twenty bowls

a) how long does it take to make 20 bowls?

b) What is "hourly wage" if she can make a profit of \$21/bowl?

- ② The cost for one adult swim pass is \$9.00. A child swim pass is \$4.25. A family swim pass is \$22.

What is the better bargain for:

a) a family with one adult and 2 kids?

b) a family with two adults and 2 kids?

- ③ A survey shows that out of 120 people, 53 match their socks every day, 32 wear mismatched socks, and 35 don't care or never noticed.

a) Graph this data using a type of graph that makes sense.

b) What percent of people wear mismatched socks?

c) How many people out of 1000 would you expect to match their socks every day?