

**DO NOW** – On the back of this packet

Name \_\_\_\_\_

**LO:** I can solve equations in terms of unspecified constants and can write and solve equations for word problems.

(1) **Solve equations with numeric or letter constants** (CC exam question) – lesson 1.4

pencil/pen

The formula for the volume of a cone is

$$V = \frac{1}{3} \pi r^2 h.$$

The radius,  $r$ , of the cone may be

JUSTIFY YOUR ANSWER BY SHOWING YOUR PROCESS

expressed as

1  $\sqrt{\frac{3V}{\pi h}}$

2  $\sqrt{\frac{V}{3\pi h}}$

3  $3\sqrt{\frac{V}{\pi h}}$

4  $\frac{1}{3} \sqrt{\frac{V}{\pi h}}$

(2) **Solve equations with numeric or letter constants** (CC exam question) – lesson 1.4 & lesson 1.1 (BUCKS)

pencil/pen

The formula for the area of a trapezoid is

JUSTIFY YOUR ANSWER BY SHOWING YOUR PROCESS

$$A = \frac{1}{2} h(b_1 + b_2).$$

Express  $b_1$  in terms of  $A$ ,  $h$ , and

$b_2$ . The area of a trapezoid is 60 square feet, its

height is 6 ft, and one base is 12 ft. Find the

number of feet in the other base.

(3) **Solve equations with numeric or letter constants** (CC exam question) – lesson 1.4

pencil/pen

The distance a free falling object has traveled can be modeled by the equation  $d = \frac{1}{2}at^2$ , where  $a$  is acceleration due to gravity and  $t$  is the amount of time the object has fallen. What is  $t$  in terms of  $a$  and  $d$ ?

JUSTIFY YOUR ANSWER BY SHOWING YOUR PROCESS

1  $t = \sqrt{\frac{da}{2}}$

2  $t = \sqrt{\frac{2d}{a}}$

3  $t = \left(\frac{da}{d}\right)^2$

4  $t = \left(\frac{2d}{a}\right)^2$

(4) **Writing and solving word problems** (CC exam question) – lesson 1.3B (BUCKS)

pencil/pen

John has four more nickels than dimes in his pocket, for a total of \$1.25. Which equation could be used to determine the number of dimes,  $x$ , in his pocket?

JUSTIFY YOUR ANSWER BY SHOWING YOUR PROCESS

1  $0.10(x + 4) + 0.05(x) = \$1.25$

2  $0.05(x + 4) + 0.10(x) = \$1.25$

3  $0.10(4x) + 0.05(x) = \$1.25$

4  $0.05(4x) + 0.10(x) = \$1.25$

(5) **Writing and solving word problems** (CC exam question) – lesson 1.3B

pencil/pen

A gardener is planting two types of trees:

JUSTIFY

Type  $A$  is three feet tall and grows at a rate of 15 inches per year.

Type  $B$  is four feet tall and grows at a rate of 10 inches per year.

Algebraically determine exactly how many years it will take for these trees to be the same height.

(4) **Exit Ticket**

ON THE LAST PAGE

 (5) **Homework** BRING BACK SIGNATURE SHEET SIGNED AND . . .

pen or  
pencil

(1)

The volume of a large can of tuna fish can be calculated using the formula  $V = \pi r^2 h$ . Write an equation to find the radius,  $r$ , in terms of  $V$  and  $h$ . Determine the diameter, to the *nearest inch*, of a large can of tuna fish that has a volume of 66 cubic inches and a height of 3.3 inches.

(3)

The owner of a small computer repair business has one employee, who is paid an hourly rate of \$22. The owner estimates his weekly profit using the function  $P(x) = 8600 - 22x$ . In this function,  $x$  represents the number of

- 1 computers repaired per week
- 2 hours worked per week
- 3 customers served per week
- 4 days worked per week

(5)

In physics the following formula relates your distance above the ground,  $d$ , relative to how long,  $t$ , an object has been in the air:

$$d = v_0 t + \frac{1}{2} a t^2$$

(a) Solve the formula for  $a$ , the acceleration due to gravity.

(b) Using your manipulated equation, find the value of  $a$  if  $d = 80$ ,  $v_0 = 50$  and  $t = 8$ .

\*note: an acceleration towards the ground is negative.

(2)

The equation for the volume of a cylinder is  $V = \pi r^2 h$ . The positive value of  $r$ , in terms of  $h$  and  $V$ , is

- 1  $r = \sqrt{\frac{V}{\pi h}}$
- 2  $r = \sqrt{V\pi h}$
- 3  $r = 2V\pi h$
- 4  $r = \frac{V}{2\pi}$

(4)

A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture each radio. If the cost of manufacturing  $r$  radios is given by the function  $c(r) = 5.25r + 125$ , then the value 5.25 best represents

- 1 the start-up cost
- 2 the profit earned from the sale of one radio
- 3 the amount spent to manufacture each radio
- 4 the average number of radios manufactured



Exit Ticket Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

1.5L

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

Use BUCKS as you complete the problem below. Justify by showing your process.

When traveling abroad many of the units used are different. One of the most common is the unit of temperature namely Fahrenheit versus Celsius. The conversion between the 2 temperatures is as follows.

$$C = \frac{5}{9}(F - 32)$$

(a) Using the formula above convert 50° Fahrenheit to Celsius.

(b) This conversion formula is very useful if you are given Fahrenheit, but less useful if you know a Celsius temperature. Solve the above equation for Fahrenheit,  $F$ , and then convert 50° Celsius into Fahrenheit. Is there a large difference in Fahrenheit and Celsius?

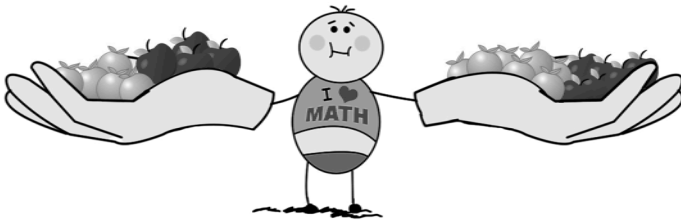
(1) Solve ONE of the equations below. List the “operations” and the “inverse operations” if you have trouble getting started or get stuck.

(a)  $-3((1 + 6r) = 14 - r$

(b)  $-12 = 2 + 5v + 2v$

(2) Describe what is supposed to make you smile in the cartoon.

Q. If you had 4 apples and 5 oranges in one hand and 6 apples and 7 oranges in the other, what would you have?



A. Very large hands.