MPM 1D0

Grade 9 Academic Math
Unit 2 – Practice Test A – Solving Equations (Not Including Problem Solving)

Mr. Nolfi
***Victim*: _____**

KU	APP	TIPS	COM
/25	/20	/8	/15

Modified True/False (3 KU)

Indicate whether each statement is ***true*** or ***false***. If false, ***change*** the underlined part to make the statement true.

1. **T/F** _____ The algebraic expression $x - 7$ represents <u>seven more</u> than a number. **Change:** _____

2. **T/F** _____ <u>$x = 2$</u> is the solution to the equation $4x - 8 = 10 - 2x$. **Change:** _____

3. **T/F** _____ "Four more than triple a number is 12" can be modelled as <u>$4n + 3 = 12$</u>.
Change: _____

Multiple Choice (6 KU)

For questions 4 to 9, select the best answer. Write the letter of your choice in the provided blank space.

4. _____ Which is the correct solution for $x + 7 = -4$?

(a) $x = 3$ **(b)** $x = -3$ **(c)** $x = -11$ **(d)** $x = 0$

5. _____ $y = -2$ is the correct solution for which equation?

(a) $3y + 1 = 5$ **(b)** $2y - 5 = 1$ **(c)** $4y + 8 = -4$ **(d)** $y - 3 = -5$

6. _____ The perimeter of a rectangle is 45 m. If the length is four times the width, what is the length?

(a) 36 m **(b)** 4.5 m **(c)** 18 m **(d)** 9 m

7. _____ The distance, d, in kilometres, a spaceship travels in t hours is given by the formula $d = 50000t$. How long will it take the spaceship to travel 150000 km?

(a) 30 h **(b)** 300 h **(c)** 0.3 h **(d)** 3 h

8. _____ By which number would you multiply both sides of the equation $\frac{x-1}{4} + \frac{2x+2}{6} = \frac{x+1}{12}$ to eliminate all the fractions?

(a) 4 **(b)** 6 **(c)** 12 **(d)** 2

9. _____ Matthew and Jonathan compete on the same pizza-eating team. Matthew has eaten 10 more slices than Jonathan and together, they have eaten 50 slices. How many slices has Jonathan eaten?

(a) 5 **(b)** 60 **(c)** 20 **(d)** 500

10. Solve each of the following equations. Wherever required, ***show the operation that is performed to each side***.

(a) $-6a-5=-2$ **(3 KU)**

(b) $-4-5s-3-2s=-s+18$ **(4 KU)**

(c) $-6(y-3)+11=-(12-2y)$ **(5 KU)**

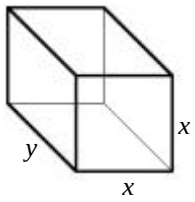
(d) $\dfrac{4(x-1)}{5}=-7$ **(4 KU)**

11. Solve the following equation showing all steps. Then check your solution to verify that it is correct. **(10 APP)**

$$\frac{3q}{2}-\frac{q+2}{4}=12-\frac{2q+3}{3}$$

Left-hand Side	**Right-hand Side**
$\dfrac{3q}{2}-\dfrac{q+2}{4}$	$12-\dfrac{2q+3}{3}$

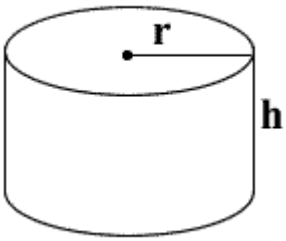
12. Shown at the right is a shape known as a ***square prism***. Its volume can be found using the formula $V = x^2 h$.



(a) Rearrange the formula to isolate *x*. (That is, solve for *x* in terms of *h* and *V*.) **(3 APP)**

(b) Given that $h = 5$ and $V = 200$, use the equation that you obtained in (a) to solve for *x*. **(2 APP)**

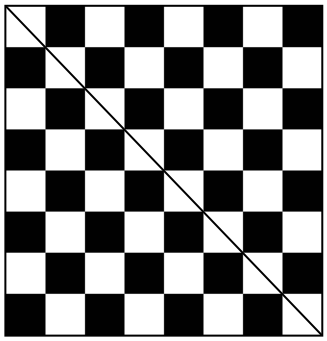
13. The surface area of a cylinder with radius *r* and height *h* is found using the formula $A = 2\pi r^2 + 2\pi rh$.



(a) ***Solve*** for *h* in terms of *r*. **(3 APP)**

(b) A cylinder has a surface area of 200 m^2 and a radius of 5 m. Use the formula that you developed in **(a)** to calculate the height of the cylinder. **(2 APP)**

14. The chessboard shown at the right has a diagonal length of 50 cm.



(a) Find the ***area*** of each small square on the chessboard. (**Hint:** The Pythagorean Theorem) **(5 TIPS)**

(b) Suppose that the squares on the chessboard were arranged in a single row. This would form a very long and "skinny" rectangle. Find the perimeter of the rectangle. **(3 TIPS)**