

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**Solve the equation.**

1) $\frac{x}{3} + 6 = \frac{x}{5} - 8$ 1) _____

A) $\{\frac{28}{15}\}$

B) $\{-\frac{28}{15}\}$

C) {105}

D) {- 105}

2) $\frac{x-2}{x-5} = \frac{x+6}{x-7}$ 2) _____

A) {-4}

B) $\{\frac{22}{5}\}$

C) $\{-\frac{15}{7}\}$

D) $\{\frac{8}{5}\}$

3) $\frac{6}{2x-3} = \frac{4}{2x+5}$ 3) _____

A) $\{\frac{21}{2}\}$

B) $\{-\frac{2}{21}\}$

C) $\{-\frac{21}{2}\}$

D) $\{\frac{2}{21}\}$

Solve the formula for the indicated variable.

4) $A = P(1 + rt)$ for t 4) _____

A) $t = -\frac{A+P}{rP}$

B) $t = \frac{P-A}{rP}$

C) $t = \frac{A-P}{rP}$

D) $t = \frac{A+P}{rP}$

5) $S = 2\pi rh + 2\pi r^2$ for h 5) _____

A) $h = 2\pi(S - r)$

B) $h = S - r$

C) $h = \frac{S}{2\pi r} - 1$

D) $h = \frac{S - 2\pi r^2}{2\pi r}$

Solve the problem.

6) It costs \$21 per hour plus a flat fee of \$30 for a plumber to make a house call. After writing an equation for this situation, what is the total cost to have a plumber come to a house for 8 hours? 6) _____

A) \$168

B) \$198

C) \$638

D) \$261

Solve the equation by factoring.

7) $x^2 - 5x - 36 = 0$ 7) _____

A) {-4, -9}

B) {4, 9}

C) {4, -9}

D) {-4, 9}

8) $x(x - 9) + 18 = 0$ 8) _____

A) {3, -6}

B) {-3, 6}

C) {3, 6}

D) {-3, -6}

Find the real solutions, if any, of the equation. Use the quadratic formula.

9) $3x^2 + x - 6 = 0$

A) $\left\{\frac{1 - \sqrt{73}}{6}, \frac{1 + \sqrt{73}}{6}\right\}$

C) $\left\{\frac{-1 - \sqrt{73}}{6}, \frac{-1 + \sqrt{73}}{6}\right\}$

B) $\left\{\frac{-1 - \sqrt{73}}{2}, \frac{-1 + \sqrt{73}}{2}\right\}$

D) no real solution

9) _____

10) $3x^2 + 11x - 20 = 0$

A) $\left\{-\frac{4}{3}, 5\right\}$

B) $\left\{\frac{4}{3}, -5\right\}$

C) $\left\{\frac{4}{3}, 5\right\}$

D) $\left\{-\frac{4}{3}, -5\right\}$

10) _____

Solve the problem.

11) A ball is thrown vertically upward from the top of a building 96 feet tall with an initial velocity of 80 feet per second. The distance s (in feet) of the ball from the ground after t seconds is $s = 96 + 80t - 16t^2$. After how many seconds will the ball pass the top of the building on its way down?

A) 7 sec

B) 96 sec

C) 4 sec

D) 5 sec

11) _____

12) The formula $A = P(1 + r)^2$ is used to find the amount of money, A , in an account after P dollars have been invested in the account paying an annual interest rate, r , for 2 years. Find the interest rate r if \$500 grows to \$980 in 2 years.

A) 40%

B) 96%

C) 240%

D) 4%

12) _____

Write the expression in the standard form $a + bi$.

13) $\frac{7 + 2i}{4 - 9i}$

A) $-\frac{46}{65} + \frac{71}{65}i$

B) $-\frac{2}{13} + \frac{71}{65}i$

C) $\frac{10}{97} + \frac{71}{97}i$

D) $\frac{46}{97} + \frac{55}{97}i$

13) _____

14) i^{17}

A) -1

B) i

C) 1

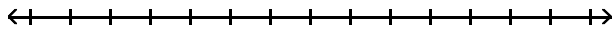
D) $-i$

14) _____

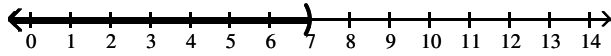
Solve the inequality. Express your answer using interval notation.

15) $-3(3x + 11) < -12x - 12$

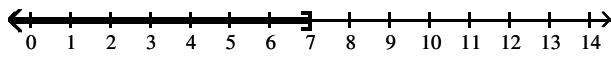
15) _____



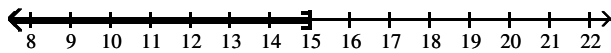
A) $(-\infty, 7)$



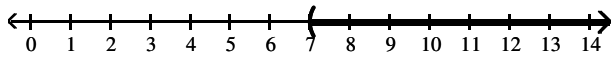
B) $(-\infty, 7]$



C) $(-\infty, 15]$

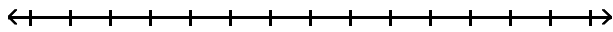


D) $(7, \infty)$

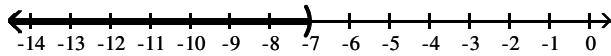


16) $-2x - 5 \geq -3x - 12$

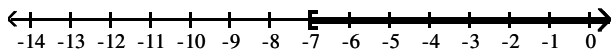
16) _____



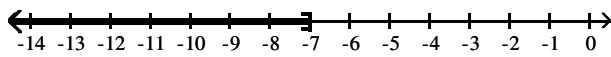
A) $(-\infty, -7)$



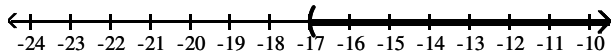
B) $[-7, \infty)$



C) $(-\infty, -7]$

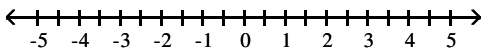


D) $(-17, \infty)$



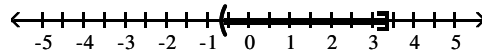
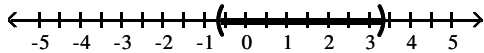
17) $0 \leq \frac{3x+2}{4} < 3$

17) _____



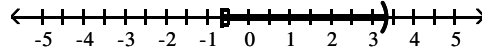
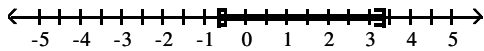
A) $(-\frac{2}{3}, \frac{10}{3})$

B) $(-\frac{2}{3}, \frac{10}{3}]$



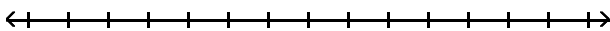
C) $[-\frac{2}{3}, \frac{10}{3}]$

D) $[-\frac{2}{3}, \frac{10}{3})$

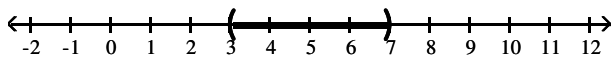


18) $-31 \leq -5x + 4 \leq -11$

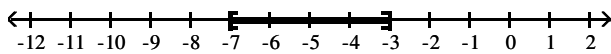
18) _____



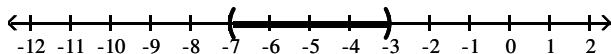
A) (3, 7)



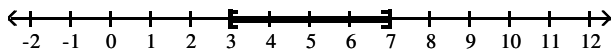
B) [-7, -3]



C) (-7, -3)



D) [3, 7]



19) $|2x - 8| - 1 > -10$

19) _____

A) $(-\infty, -\frac{1}{2})$ or $(\frac{17}{2}, \infty)$

B) $(-\frac{1}{2}, \frac{17}{2})$

C) $(-\infty, \infty)$

D) no solution

20) $|x + 1| - 6 \leq -3$

20) _____

A) $(-\infty, -4)$ or $(2, \infty)$

B) [-4, 2]

C) [4, -3]

D) no solution

21) $|5 - 7x| > 9$

21) _____

A) $(-\infty, -\frac{4}{7}) \cup (\frac{4}{7}, \infty)$

B) $(-\infty, -\frac{4}{7}) \cup (2, \infty)$

C) $(-\frac{4}{7}, \infty) \cup (2, \infty)$

D) $(-\frac{4}{7}, 2)$

Solve the problem.

22) How much pure acid should be mixed with 6 gallons of a 50% acid solution in order to get an 80% acid solution? 22) _____

A) 15 gal

B) 3 gal

C) 9 gal

D) 24 gal

23) How many gallons of a 30% alcohol solution must be mixed with 60 gallons of a 14% solution to obtain a solution that is 20% alcohol? 23) _____

A) 7 gal

B) 27 gal

C) 36 gal

D) 12 gal

24) An airplane flies 500 miles with the wind and 340 against the wind in the same length of time. If the speed of the wind is 40, what is the speed of the airplane in still air? 24) _____

A) 200 mph

B) 85 mph

C) 215 mph

D) 210 mph

25) During a hurricane evacuation from the east coast of Georgia, a family traveled 250 miles west. For part of the trip, they averaged 60 mph, but as the congestion got bad, they had to slow to 10 mph. If the total time of travel was 9 hours, how many miles did they drive at the reduced speed? 25) _____

A) 58 mi

B) 63 mi

C) 53 mi

D) 68 mi

Answer Key

Testname: MATH1111-Q1-PRACTICE

- 1) D
- 2) B
- 3) C
- 4) C
- 5) D
- 6) B
- 7) D
- 8) C
- 9) C
- 10) B
- 11) D
- 12) A
- 13) C
- 14) B
- 15) A
- 16) B
- 17) D
- 18) D
- 19) C
- 20) B
- 21) B
- 22) C
- 23) C
- 24) D
- 25) A