

GMP II INTO III SUMMER HOMEWORK

NAME: _____

- THIS HOMEWORK WILL BE YOUR FIRST GMP III 1ST QUARTER QUIZ.
- THIS IS NOT MEANT TO BE DONE IN ONE SITTING. PLAN AHEAD AND PACE YOURSELF SO THAT YOU ARE DOING ONLY A FEW PROBLEMS AT A TIME. YOU WILL GET MUCH MORE OUT OF IT THIS WAY.
- SHOW ALL WORK ON LINED PAPER AND GRAPH PAPER. YOUR HEADING ON THE FIRST PAGE SHOULD BE YOUR NAME IN THE UPPER LEFT HAND CORNER AND “QUIZ #1” IN THE UPPER RIGHT HAND CORNER. PROBLEMS WILL NOT BE GRADED BASED ON THE ANSWERS, BUT RATHER BASED ON THE WORK SHOWN OR EXPLANATION OR A CHECK OF THE ANSWER. IF THERE IS ONLY AN ANSWER SHOWN, YOU WILL NOT EARN CREDIT FOR A PROBLEM.

1) COMPLETELY FACTOR AND SOLVE FOR X: (3 EA)

A. $x^2 + 50x + 625 = 0$

B. $64x^2 = 121$

C. $2x^2 - 2x - 112 = 0$

D. $x^2 - 13x = 48$

E. $x^2 - 6x - 72 = 0$

2) COMPLETE THE SQUARE, AND REWRITE THESE QUADRATICS IN THE FORM $y = a(x - h)^2 + k$. THEN, FOR EACH PARABOLA, STATE THE VERTEX, THE EQUATION OF THE AXIS OF SYMMETRY, AND WHETHER EACH VERTEX IS A MINIMUM OR A MAXIMUM. NAME ANY X-INTERCEPTS AND Y-INTERCEPTS. THEN, CORRECTLY AND COMPLETELY GRAPH THE EQUATIONS. (5 EA)

a. $y = x^2 + 6x$

B. $y = -x^2 - 4x + 3$

C. $y = 3x^2 - 6x + 4$

3) GRAPH THE LINES $y = -4x + 5$ AND $y = 3x + 5$ ON THE SAME SET OF AXES. DETERMINE THE POINT(S) OF INTERSECTION. (2)

4) SIMPLIFY THESE EXPRESSIONS: (2 EA)

A. $\frac{x^2-1}{x+1} \cdot \frac{x+3}{3x-3}$

B. $\frac{2x^2-12x}{x-6}$

C. $\frac{6v^3+42v^2}{2v^2+26v+84}$

5) THE LENGTH OF A RECTANGLE IS REPRESENTED BY $5x - 7$ AND THE WIDTH BY $3x + 2$. FIND ITS DIMENSIONS IF THE PERIMETER IS 70 INCHES. (3)

6) SOLVE FOR X: (2 EA)

$$\frac{5}{x} = \frac{x + 13}{6}$$

$$\frac{5}{8}x - \frac{1}{2} = 7$$

7) SOLVE THESE SYSTEMS OF EQUATIONS FOR X AND Y, EITHER ALGEBRAICALLY OR GRAPHICALLY. (4 EA)

A. $y = 3x - 2$

$$y = -x - 6$$

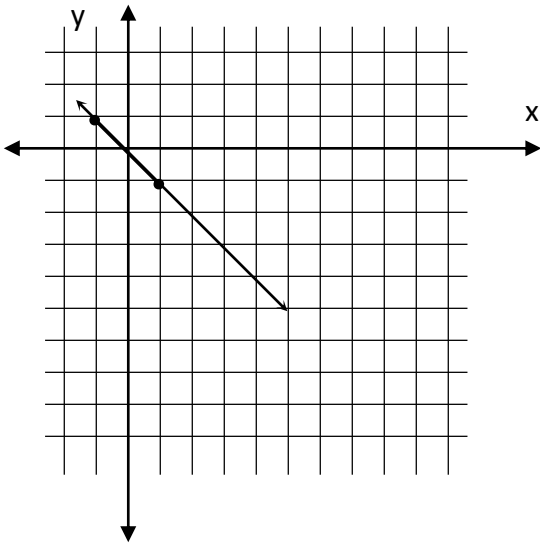
B. $y = x^2 - x - 6$

$$y = 2x - 2$$

C. $x^2 + y^2 = 26$

$$x - y = 6$$

8) FILL IN THE BLANKS: (3)



The slope of the line is: _____

The y-intercept is: _____

List 3 points on the line:

9) SIMPLIFY THESE RADICALS. (2 EA)

1. $\sqrt{48}$	6. $\sqrt{288}$
2. $\sqrt{75}$	7. $\sqrt{\frac{9}{64}}$
3. $\sqrt{600}$	8. $\frac{7}{\sqrt{5}}$
4. $2\sqrt{25}$	9. $(-7\sqrt{3})(11\sqrt{12})$
5. $4\sqrt{8}$	10. $\frac{2\sqrt{10}+3\sqrt{40}}{5\sqrt{2}}$

10) SOLVE FOR X: (2 EA)

A. $RSX - RS^2 = 0$

B. $8AX - 7A^2 = 19A^2 - 5AX$

11) JACK BOUGHT 3 SLICES OF CHEESE PIZZA AND 4 SLICES OF MUSHROOM PIZZA FOR A TOTAL COST OF \$12.50. GRACE BOUGHT 3 SLICES OF CHEESE PIZZA AND 2 SLICES OF MUSHROOM PIZZA FOR A TOTAL COST OF \$8.50. WHAT IS THE COST OF ONE SLICE OF MUSHROOM PIZZA? (2)

12) JONATHAN WANTS TO SAVE UP ENOUGH MONEY SO THAT HE CAN BUY A NEW SPORTS EQUIPMENT SET THAT INCLUDES A FOOTBALL, BASEBALL, SOCCER BALL, AND BASKETBALL. THIS COMPLETE BOXED SET COSTS \$50. JONATHAN HAS \$15 HE SAVED FROM HIS BIRTHDAY. IN ORDER TO MAKE MORE MONEY, HE PLANS TO WASH NEIGHBORS' WINDOWS. HE PLANS TO CHARGE \$3 FOR EACH WINDOW HE WASHES, AND ANY EXTRA MONEY HE MAKES BEYOND \$50 HE CAN USE TO BUY THE ADDITIONAL ACCESSORIES THAT GO WITH THE SPORTS BOX SET.

WRITE AND SOLVE AN INEQUALITY THAT REPRESENTS THE NUMBER OF WINDOWS JONATHAN CAN WASH IN ORDER TO SAVE AT LEAST THE MINIMUM AMOUNT HE NEEDS TO BUY THE BOXED SET. GRAPH THE SOLUTIONS ON THE NUMBER LINE. WHAT IS A REALISTIC NUMBER OF WINDOWS FOR JONATHAN TO WASH? HOW WOULD THAT BE REFLECTED IN THE GRAPH? (3)

13) A CONTRACTOR NEEDS 54 SQUARE FEET OF BRICK TO CONSTRUCT A RECTANGULAR WALKWAY. THE LENGTH OF THE WALKWAY IS 15 FEET MORE THAN THE WIDTH.

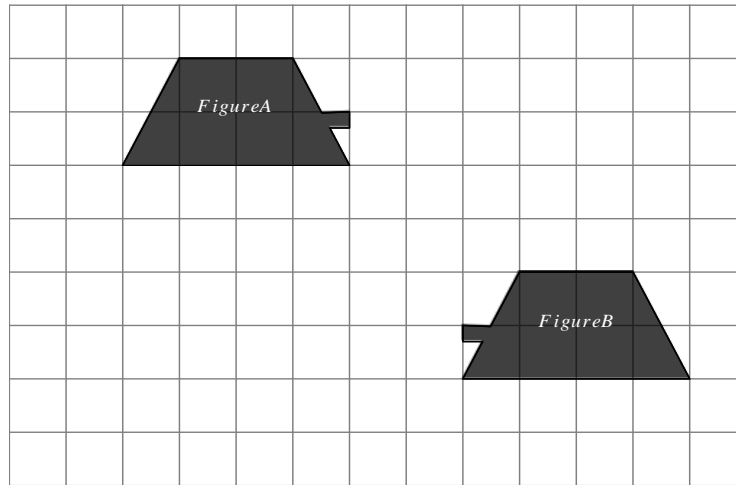
WRITE AN EQUATION THAT COULD BE USED TO DETERMINE THE DIMENSIONS OF THE WALKWAY. SOLVE THIS EQUATION TO FIND THE LENGTH AND WIDTH, IN FEET, OF THE WALKWAY. (3)

14) IS IT POSSIBLE TO HAVE \$4.50 IN DIMES AND QUARTERS AND HAVE TWICE AS MANY QUARTERS AS DIMES? SHOW HOW YOU ARRIVED AT YOUR ANSWER. (4)

15) IS IT POSSIBLE TO HAVE TWO ANGLES THAT ARE SUPPLEMENTARY BUT ARE NOT A LINEAR PAIR? EXPLAIN. (2)

16) USE THE PICTURE BELOW TO ANSWER THE QUESTIONS.

FIGURE A HAS BEEN TRANSFORMED TO FIGURE B.



CAN FIGURE A BE MAPPED ONTO FIGURE B USING ONLY TRANSLATION? EXPLAIN. USE DRAWINGS, AS NEEDED, IN YOUR EXPLANATION. (2)