

Directions: Place all answers on the answer sheet attached. You must also show all work in the space provided to receive credit.

Part 1: Algebra**Solve each equation. Show all work!**

1. $-3(x + 5) = 8x + 18$

2. $\frac{x+1}{-3} = \frac{x-4}{5}$

3. $x^2 - 16x + 64 = 0$

4. $2x^2 = 9x + 5$

5. $25y^2 - 49 = 0$

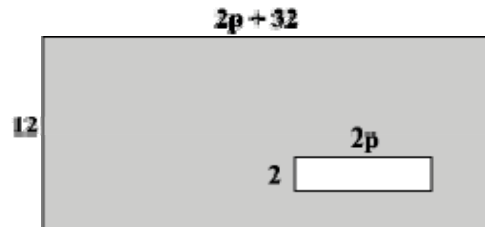
Simplify. Leave each answer in simplest radical form. No decimals please!

6. $\sqrt{54x^4y}$

7. $\sqrt{\frac{4}{5}}$

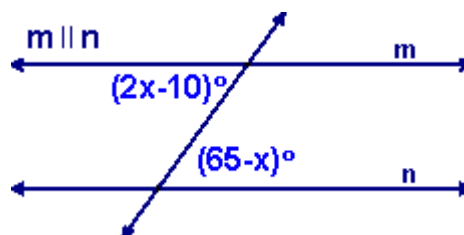
Part 2: Geometry

8. What is the simplified expression for the area of the shaded region in the larger of these two rectangles?

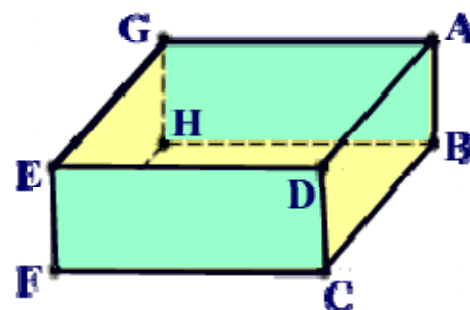


9. The measures of two supplementary angles are in the ratio of 4:5. What is the degree measure of the smaller angle?
10. A tree casts a 20-m shadow at the same time that a 6-m pole casts an 8-m shadow. Find the height of the tree.
11. Three points are collinear if they are on the same line.
- Explain how you would use slope to determine if three points were collinear.
 - Find the value for k such that $(4, 2)$, $(0, 8)$, and $(-2, k)$ are collinear. Show your approach.

12. What is the value of x in the figure below?

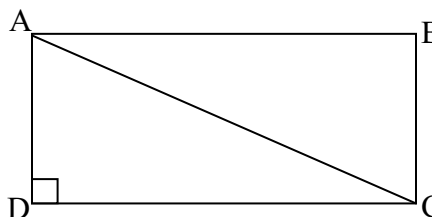


13. a. Name three points that are coplanar in the rectangular prism shown below.

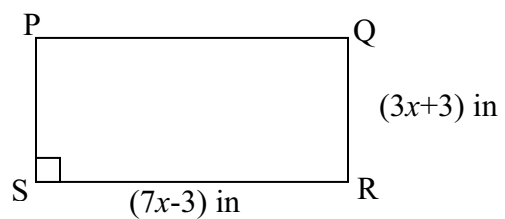


- b. Name 2 lines that intersect at point E.

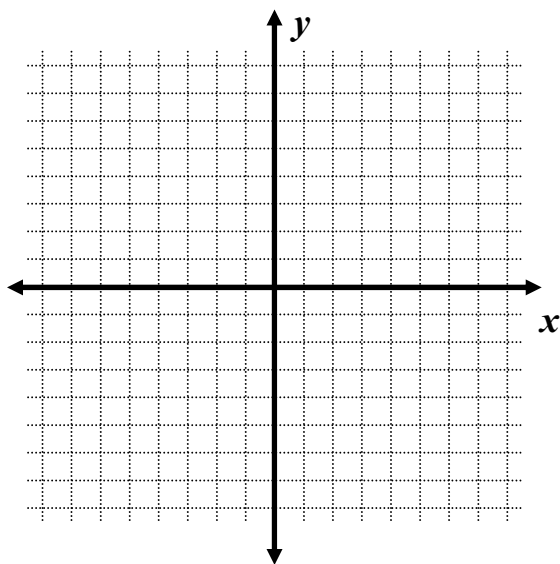
14. In rectangle ABCD, $AD = 6$ cm and $DC = 8$ cm.
Find the length of the diagonal AC.



15. If the perimeter of rectangle PQRS is 40 inches, find x .

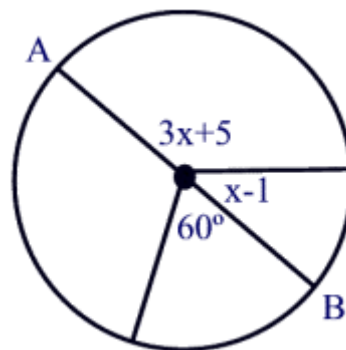


16. Perpendicular lines A and B cross at the point $(3, 4)$. Line A has a slope of $\frac{1}{2}$.
- a. Draw both lines on the graph. Write the slope of line B . Explain how you got your answer.



- b. If a third line, C , were parallel to line A , what would be the slope of line C ? Explain how you got your answer.
17. Given the labeled diagram at the left, with diameter \overline{AB} .

Find x .

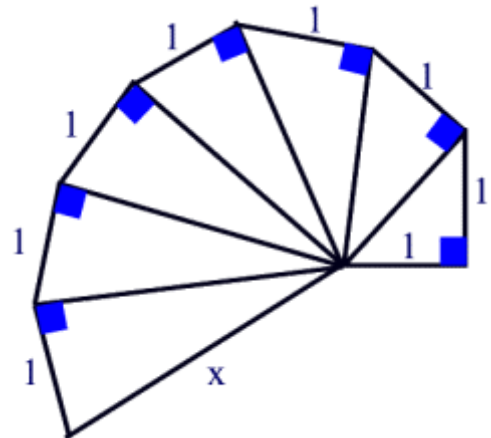


18.

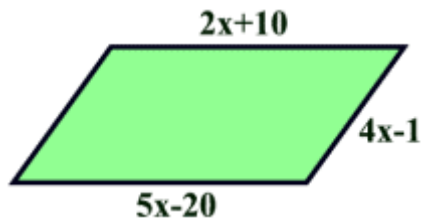


Joe Bean regularly takes a short-cut across Mr. Wilson's lawn instead of walking on the sidewalk on his way home from school. How much distance is saved by Joe cutting across the lawn?

19. Find the value of x .



20. The opposite sides of a parallelogram are represented by $2x + 10$ and $5x - 20$. Find the length of the side of the parallelogram represented by $4x - 1$.



Name _____

Review of Algebra Geometry Preparation
Answer Key

Part 1: Algebra

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

Part 2: Geometry

8. _____

9. _____

10. _____

11. a.

b. _____

12. _____

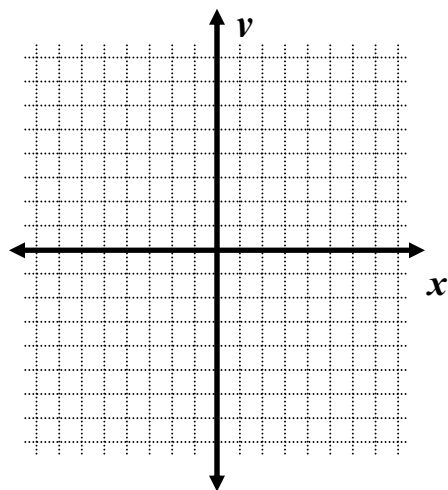
13. a. _____

b. _____

14. _____

15. _____

16. a.



b.

17. _____

18. _____

19. _____

20. _____