

## Summer Math Review 2017

### *For Section 9 Accelerated*

- *You should not use a calculator for this work.*
- *Work on a separate sheet of paper.*
- *Show all work.*

#### Algebra Review

Simplify:

1.  $-13 + 23 + (-2)$

2.  $7 + (-16) + 46 + (-16) + 5$

3.  $1\frac{3}{7} + 3\frac{3}{5}$

4.  $2\frac{5}{9} - \frac{5}{6}$

5.  $2\frac{3}{4} \cdot 3\frac{1}{5}$

6.  $\frac{4}{15} \div \frac{2}{5}$

7.  $25 - 10 \div 2$

8.  $3[2 + (5 + 2^3)]$

9.  $(3^2 - 4^2)^2$

Evaluate:

10.  $8x^2 + x - 9$  for  $x = 2$

11.  $\frac{21xy}{x+y}$  for  $x = 3, y = 4$

Solve:

12.  $3(y - 2) = 10$

13.  $\frac{1}{3}d + 8 = \frac{1}{6}d - 2$

14.  $3r - 5 + 5(r - 1) = 5r - 5$

Simplify and use no negative exponents in your answer:

15.  $x^2 \cdot x^3$

16.  $\frac{x^2}{x^3}$

17.  $(x^2)^3$

18.  $\frac{6x^5y^6}{2x^3y^9}$

19.  $x^{1/2} \cdot x^{2/3}$

20.  $\left(\frac{2x^2}{y^3}\right)^{-2}$

Find each sum or difference:

$$21. (5r^2 - 4r + 32) + (-6r^2 - 17r + 2)$$

$$22. (31m - 5) - (-24m - 9) + (5m - 10)$$

$$23. (-b^3 - b) - (b^3 + b^2) - (-b^2 + b)$$

Find each product:

$$24. -3(-2x - 4)$$

$$25. 7c(2c^2 + 4c - 9)$$

$$26. (w + 5)(w - 8)$$

Simplify:

$$27. \sqrt{8}$$

$$28. \sqrt{10} \cdot \sqrt{15}$$

$$29. \frac{\sqrt{126}}{\sqrt{7}}$$

$$30. \sqrt[3]{8x^6y^9}$$

$$31. \sqrt{45} + \sqrt{20}$$

Solve each equation:

$$32. h^2 - h = 0$$

$$33. z^2 - 6z + 5 = 0$$

$$34. k^2 + 6k - 40 = 0$$

$$35. a^2 - 12a + 36 = 0$$

$$36. d^2 - 9 = 0$$

Solve the following equations using the quadratic formula, leaving each answer in simplified radical form:

$$37. x^2 + 3x + 1 = 0$$

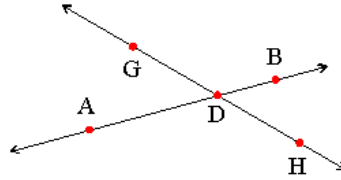
$$38. x^2 - 4x - 2 = 0$$

$$39. 2x^2 + 7x + 2 = 0$$

$$40. x^2 - 2x + 1 = 3$$

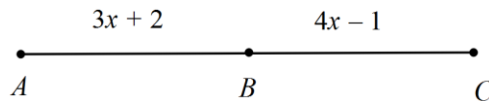
## Geometry Review

1. In the diagram:



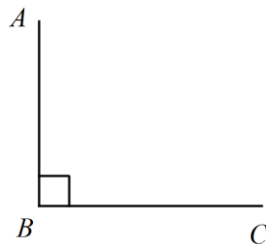
- Give 2 different notations for the line that includes point A.
- Are the lines  $\overleftrightarrow{GD}$  and  $\overleftrightarrow{GH}$  the same line? Why?
- Are the rays  $\overrightarrow{GD}$  and  $\overrightarrow{GH}$  the same ray? Why?
- Are the rays  $\overrightarrow{GD}$  and  $\overrightarrow{DG}$  the same ray? Why?
- State an angle in the diagram that appears to be acute.
- State an angle in the diagram that appears to be obtuse.
- State an angle in the diagram that appears to be straight.
- What are the sides of angle  $\angle ADG$ ?
- State three points that are collinear.

2. In the diagram:



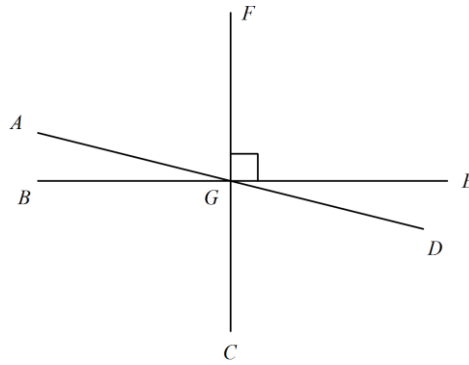
B is the midpoint of  $\overline{AC}$ . Find the length  $AC$ .

3. In the diagram:

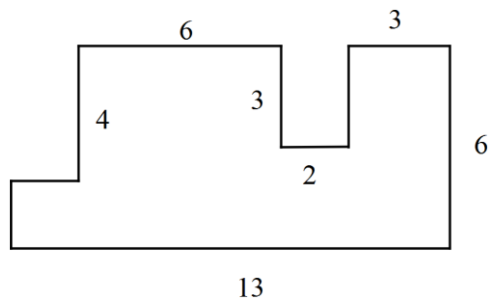


- segments  $\overline{AB}$  and  $\overline{BC}$  are \_\_\_\_\_.
- the measure of  $\angle ABC$  is \_\_\_\_\_.

4. In the diagram:



- a. state an angle other than  $\angle FGE$  that is right.
  - b. state two angles that are adjacent.
  - c. state two angles that are vertical.
  - d. state two angles that are complementary.
  - e. state two angles that are supplementary.
  - f. state two angles that are congruent but are not right angles.
5. A rectangle has sides of length 4cm and 7cm.
- a. What is its perimeter?
  - b. What is its area?
6. A circle has a radius of 5in.
- a. What is its circumference?
  - b. What is its area?
7. Find the area of the figure. Assume all angles are right.



8. Find the perimeter and area of a rectangle whose length is 3 cm and whose width is 2 cm.
9. Find the volume of a rectangular box with dimensions 2 ft, 4 ft, and 5 ft.
10. Find the surface area of a rectangular box with dimensions 2 ft, 4 ft, and 5 ft.
11. The area of a triangle is  $24 \text{ cm}^2$ . Find its height if its base measures 6 cm.