



SHELTON BOARD OF EDUCATION

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Dear Students and Guardian(s),

According to research, students lose about 2.6 months of learning in mathematics over the summer. This phenomenon, also known as summer slide, can cause students to start the new academic year with a lower achievement level than where they left off at the closure of the prior year. Most importantly, researchers identify long-lasting effects from summer loss related to lower self-confidence, as well as success in school and college.

The Shelton Public School System has developed a Summer Math Challenge that can easily integrate into your summer plans. The program is designed to be developmentally appropriate for your student based on the grade level they will be entering for the 2019-2020 school year. We recommend scheduling time for your learner(s) to participate in this program.

The importance of spending time with family and enjoying the outdoors also provides valuable learning opportunities. Involvement in authentic experiences allow learners for knowledge transfer beyond the classroom and vice versa. Many daily scenarios provide opportunities for problem solving and reasoning, such as estimating time and cost of travel, doubling ingredients in family recipes, planning and budgeting for home projects, probability in sports and playing board games.

Specific Grade Summer Math Challenge for students in grades K-12, can be found at www.sheltonpublicschools.org under the Teaching and Learning tab.

We hope that you will participate in this year's summer math challenge and help our learners in maintaining and improving their math skills, as well as further develop their confidence in math during the summer.

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Shelton Intermediate School
Summer Review Packet
For all students entering
8th Grade Pre-Algebra

Name: _____

Dates worked on: _____

Summer Work Directions:

Required-

- 1) All students are required to complete each of the following exercises in the **summer work packet** using the skills you learned in previous classes. To receive full credit for this assignment, you must show your work and complete ALL of the problems in this packet. You may use a calculator to help with calculations, but you must still show all of your work. For assistance in completing individual problems, you should refer to your notes from previous classes, use online resources such as Khan Academy or work with your peers. I don't know or IDK will not be accepted.
- 2) All students are required to complete **at least 10 IXL strands** from the recommended list. All IXL strands can be found under **Grade 7**.

The completed packet and IXL log is due the second day of class. Each part will count as a grade in math class.

Incentives -

Students have the opportunity to earn tickets to win a TI-84 Plus Graphing Calculator or gift cards to stores/restaurants in the area by completing **more than** 10 IXL strands from the packet. For each additional 20 minutes spent, you will receive one raffle ticket. The more you practice the greater your chances are of winning!

Recommended IXL List - Complete at least 10 IXL strands from the recommended list. All IXL strands can be found under **Grade 7**.

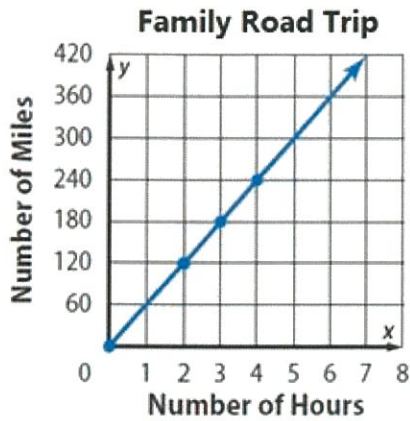
<u>Skill</u>	<u>Date</u>	<u>SmartScore</u>	<u>Time Spent</u>
<u>1</u> J.14 Rate of change: tables			
<u>2</u> J.15 Rate of change: graphs			
<u>3</u> J.5 Unit rate			
<u>4</u> C.9 Add and subtract integers			
<u>5</u> C.17 Multiply and divide integers			
<u>6</u> G.3 Add and subtract mixed numbers			
<u>7</u> G.11 Multiply fractions and mixed numbers: word problems			
<u>8</u> G.16 Add, subtract, multiply, and divide fractions and mixed numbers: word problems			
<u>9</u> R.11 Multiply using the distributive property			
<u>10</u> R.13 Write equivalent expressions using properties			
<u>11</u> R.14 Add and subtract linear expressions			
<u>12</u> S.2 Write as an equation			
<u>13</u> S.5 Solve one-step equations			
<u>14</u> S.6 Solve two-step equations			
<u>15</u> S.7 Solve equations: word problems			
<u>16</u> S.8 Solve equations involving like terms			
<u>17</u> W.16 Identify complementary, supplementary, vertical, and adjacent angles			
<u>18</u> W.17 Find the measure of complementary, supplementary, vertical, and adjacent angles			
<u>19</u> AA.5 Circles: calculate area, circumference, radius, and diameter			
<u>20</u> AA.6 Circles :word problems			
<u>21</u> . DD.6 Make predictions using theoretical probability			
<u>22</u> . DD.9: Probability of compound events			
<u>23</u> . DD.10 Identifying independent and dependent events			
<u>24</u> . AA.7 Volume of cubes and prisms			
<u>25</u> . AA.9 Volume of pyramids			

Ratios and Proportional Relationships

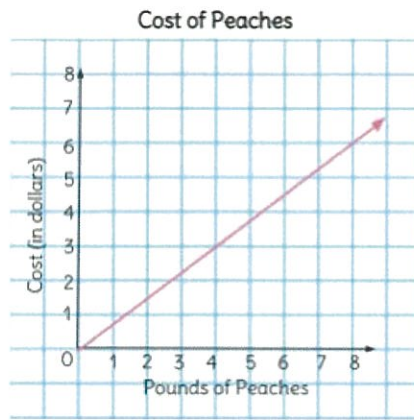
Rate of Change (Recommended IXL Strands: J.13 and J.14)

Find the rate of change for each scenario, don't forget units.

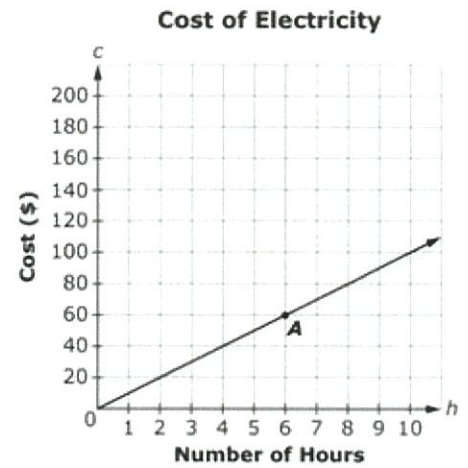
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2.



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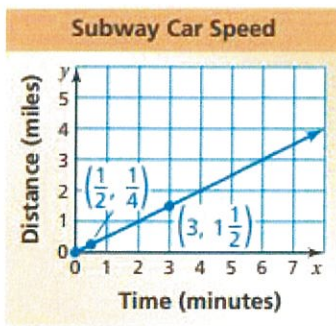
Unit Rate (Recommended IXL Strands: J.5)

Find the unit rate.

4. \$4.80 for 6 cans of soda

5. $21\frac{3}{4}$ meters in $2\frac{1}{2}$ hours

6. Find the unit rate from the graph below.



7. Find the unit rate of servings per package.

Packages	3	6	9	12
Servings	13.5	27	40.5	54

The Number System

Computation with Integers (Recommended IXL Strands: C.9 and C.17)

Evaluate.

8. $-5 + (-4)$

9. $6 - 18$

10. $-12 + 19$

11. $7 - (-10)$

12. $-4 - 6$

13. $25 + (-13)$

14. Your bank account has a balance of \$ -50. You deposit \$31. What is your new balance?

15. $\frac{-15}{3}$

16. $(-4)(9)$

17. $-24 \div -8$

18. -12×7

19. $(-5)(-11)$

20. $\frac{-42}{-3}$

21. The temperature decreased 3 degrees per hour from 9pm to 2am. Write and evaluate an expression to represent the overall change in temperature.

Computation with Fractions (Recommended IXL Strands: G.3, G.11, and G.16)

22. $\frac{2}{3} - (-\frac{2}{3})$

23. $\frac{7}{10} + -\frac{2}{3}$

24. $3\frac{1}{2} - 2\frac{5}{9}$

25. $1\frac{5}{12} + 3\frac{1}{2}$

26. $\frac{3}{5} \cdot \frac{2}{3}$

27. $1\frac{3}{8} \cdot \frac{3}{4}$

28. $8 \div \frac{1}{4}$

29. $\frac{3}{7} \div \frac{5}{9}$

30. Jen bought $1\frac{1}{2}$ pounds of candy at the candy store. If Ryan bought $\frac{1}{2}$ as much candy as Jen, how many pounds of candy did Ryan purchase?

31. As part of a lesson on earthquakes, a science class is researching the movement of a nearby fault line. The fault line moved $4\frac{7}{12}$ inches during the past year and $3\frac{7}{12}$ inches the year before. How far did the fault line move in all?

Expressions and Equations

Simplify Expressions (Recommended IXL Strands: R.13 and R.14)

Simplify each expression.

32. $12x + 7 + 8x$

33. $2n - 4 + 7n$

34. $3x - 2 + 7 - 5x$

35. $8 + 4a + 6.2 - 9a$

Distributive Property (Recommended IXL Strands: R.11)

Simplify each expression.

36. $2(x + 2)$

37. $6(x - 5)$

38. $4(b - 6) + 19$

39. $2x - 3(x + 6)$

Write Equations (Recommended IXL Strands: S.2)

Write the word sentence as an equation.

40. 6 less than a number n is -12. 41. Five more than the product of -3 and a number q is 15

Write and solve an equation to represent each real-world scenario.

43. The cost of three ice cream cones is \$24.95. If each ice cream cone cost the same amount, what was the price, p , of one ice cream cone?

44. It costs \$2.50 to rent bowling shoes. Each game costs \$2.25. You have \$9.25. How many games, g , can you bowl?

Solve Equations (Recommended IXL Strands: S.5, S.6, S.7 and S.8)

Solve the equation. Check your solution.

45. $x + \frac{5}{9} = \frac{1}{6}$

46. $-2\frac{1}{4} = r - \frac{4}{5}$

47. $8 = -\frac{2}{5}c$

48. $\frac{n}{16} = -5$

49. $4 + 2.2h = -3.7$

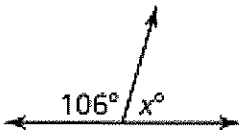
50. $-\frac{9}{4}v + \frac{4}{5} = \frac{7}{8}$

Geometry

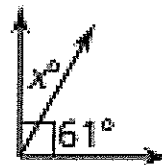
Angles (Recommended IXL Strands: W.16 and W.17)

Tell whether the angles are supplementary, complementary or vertical. Then find the value of x .

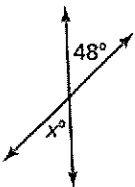
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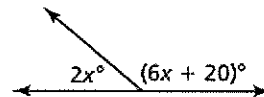
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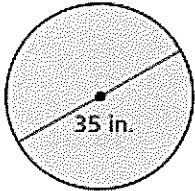
Area and Circumference of Circles (Recommended IXL Strands: AA.5 and AA.6)

Find the area and circumference of each circle. Use 3.14 for π .

55. Circle with a radius = 4 cm

56. Circle with a diameter of 15 m

57.

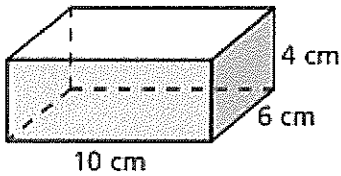


Volume

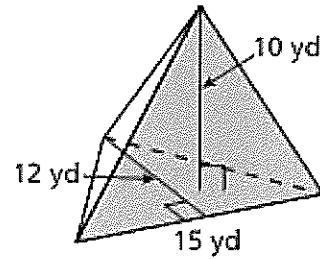
Prisms and Pyramids (Recommended IXL Strands: AA.7 and AA.9)

Find the volume of each figure.

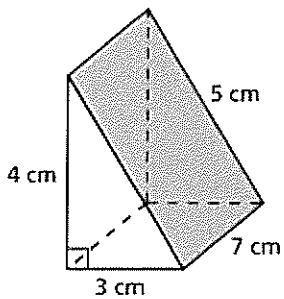
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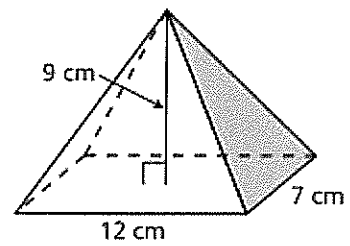
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60.



61.



Statistics and Probability

Dependent and Independent Events (Recommended IXL Strands: DD.6 and DD.10)

Identify if each event is independent or dependent.

62. You randomly draw a lane for the 100 meter race. Then your friend randomly draws a lane for the same race.

63. You roll a 4 on a number cube. Then you roll an even number on a different number cube.

Find the probability.

64. A bag holds six chips numbered 1 - 6. Without replacing the first chip, you choose a second chip. Find the probability.

Compound Events (Recommended IXL Strands: DD.9)

You spin the spinner and flip a coin. Find the probability of the compound event.

65. Spinning a 3 and flipping heads

66. Not spinning 2 and flipping tails

