June 2026

Dear 7th Grade Families,

The incoming 8th-grade students are expected to read at least **two** books over the summer. Students are encouraged to read additional books as well. The assigned summer reading book for the incoming OLL 8th Grade students is titled **The Book Thief** by Markus Zusak. This novel will serve as foundational knowledge for the Holocaust unit that the students will learn in 8th grade. The second assigned book is of your choosing. You may choose any book that meets the following criteria:

- Must be your reading level or above
- You can choose one regular novel, or two graphic novels

Common Sense Media says:

"Death himself narrates the story of Liesel, a German girl left with foster parents just before the outbreak of World War II. Along the way to her new home with her younger brother, he dies; after the funeral, Liesel steals *The Gravedigger's Handbook*, though she cannot yet read. It's only the first of what will become a series of book thefts. As she settles in with her harsh but caring foster mother, Rosa, and kind foster father, Hans, Liesel gets to know her under-resourced neighborhood and learns to read. Her obsession with books grows as the war closes in, rationing is put in place, air raids begin, and Hans hides a Jewish man in the basement. Through it all, Death travels the Earth, taking in more and more souls every day alongside his own internal trials and hardships."

The Book Thief is available at the Seattle Public Library and all bookstores.

Each student must complete the writing assignment listed below:

Writing Assignment:

Write a friendly letter to me, Miss Creighton, about the following:

1. **The Book Thief**
    - Tell me about the **settings** of the book: time and place (make sure to include all the important settings)
    - Tell me about the **main character**, Liesel. What character traits did you admire in her (give specific examples from the book, including PAGE #'S)? What character traits did you not admire (give specific examples from the book, including PAGE #'S)? Give reasons about why you felt this way about Liesel.

- What did you learn about this time period in history? What more do you want to learn? (We will study the Holocaust in 8th grade.)
- Would you recommend other 8th grade students read this book? Why or why not? Make sure to give specific reasons.

2. What was the second book you chose to read over the summer? Did you like it and why? Please summarize the story.

3. Tell me about one fun thing you did this summer.

Requirements for this paper are:

- This should be **typed and double-spaced, in 12-point font, Times New Roman**.
- You should write at least **6-7 paragraphs**.
- Make sure you include the **page numbers** in your paper for the "evidence" to support your answers.
- This should be in a **friendly letter format**.
- Have someone **proofread** your paper before you turn it in.
- This paper will be due on the first day of school (you can turn it in earlier if you want). You can either turn this in printed out or on Google Classroom.

Please join Miss Creighton's 2026-27 Humanities Google Classroom. Your Google Classroom code is: wxof3dcw

I hope you have a wonderful summer. Please contact me via e-mail, mcreighton@ollseattle.org, with any questions about the attached information.

READ, READ, READ, READ, READ, READ, READ, READ, READ!!!

Miss Creighton

Item due the first day of school:

_____ *Letter to Miss Creighton*

SUMMER LEARNING PACKET

INCOMING 8TH GRADE

Summer Math

9 WEEKS · NO CALCULATOR · 50–60 MIN / WEEK · PRE-ALGEBRA REVIEW



9 WEEKS

HOW TO USE THIS PACKET

Each week has two parts. Aim for 50–60 minutes total spread across a few days. If you hit 60 minutes, circle where you stopped — you're done for the week. Each week, always start at the beginning of that week's section, not where you left off the week before.

PACING TARGET

29 problems per week. Part 1 is 15 problems (~25–30 min). Part 2 is 14 problems + an optional challenge (~25–30 min). This packet reviews pre-algebra skills to prepare students for Algebra 1.

FOR PARENTS & GUARDIANS

Please support your student in working through this packet independently. **No calculators for any problem.** Packets will be collected in the fall and reviewed for completion.

STUDENT NAME	GRADE ENTERING	DATE RECEIVED

NOTEBOOK REMINDER

If you need extra space to show your work, use a notebook. Keep your work organized — label each page with the **date**, **week number**, and **problem number**. Bring your notebook *and* your completed packet on the first day of school.

Week 1 of 9

Integer & rational number operations

WEEK 1 OF 9

Name: _____ Date completed: _____

> **No calculators this summer.** Work by hand — that's where the learning happens. If you hit **60 minutes**, circle where you stopped and put the packet away. You're done for the week.

Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. $-8 + (-5) =$ _____
   Answer: _____
2. $6 - (-4) =$ _____
   Answer: _____
3. $-9 \times 7 =$ _____
   Answer: _____
4. $-56 \div (-8) =$ _____
   Answer: _____
5. $-4 \times (-3) \times (-2) =$ _____
   Answer: _____

CORE PRACTICE (7 problems)

6. $-2\frac{1}{2} + 1\frac{3}{4} =$ _____
   Answer: _____
7. $-\frac{3}{4} \times (-\frac{8}{9}) =$ _____
   Answer: _____
8. $-3.6 \times 2.5 =$ _____
   Answer: _____
9. $-18.4 \div (-4) =$ _____
   Answer: _____
10. $-1\frac{2}{3} \div \frac{5}{6} =$ _____
    Answer: _____

(11) Order from least to greatest: $-2.5, -\frac{5}{2}, -2.49, -3, -\frac{8}{3}$

Answer: _____

(12) What is the sign of the product of five negative numbers? Explain.

Answer: _____

WORD PROBLEMS (3 problems)

(13) A submarine descends 4.5 m per minute for 12 minutes, then rises 18.75 m. Write the final depth as a rational number.

Show your work:

Answer: _____

(14) A bank account has −$48.50. Three equal deposits are made and the balance becomes $28.75. How much was each deposit?

Show your work:

Answer: _____

(15) Temperature changes: −12°F, rises 8.5°, drops 14°, rises 6.25°. What is the final temperature? What was the total absolute change?

Show your work:

Final temp: _____ Total absolute change: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) $(-3)^2 - (-2)^3 =$ _____

(17) $(-\frac{2}{3})^2 \times (-9) =$ _____

(18) Without calculating, determine the sign of: $(-2)^3 \times (-3)^2 \div (-6)$. Then calculate.

(19) The product of two rational numbers is −1. One is $-\frac{3}{4}$. What is the other?

(20) A stock changes: −$3.25, +$1.50, −$4.75, +$2.00, −$1.50. Total change? If started at $48.50, final price?

(21) Four friends share equally in a business loss of $234.60. Then the business earns $89.50, also shared equally. What is each person's net gain or loss?

MULTI-STEP WORD PROBLEMS (3 problems)

(22) A football team: gains 7.5 yards, loses $3\frac{2}{3}$ yards, gains 12 yards, loses 8.25 yards. Total yardage? Average gain/loss per play?

Show your work:

Total yardage: _____ Average per play: _____

(23) A golfer scores −3, +2, −5, −1, +4, −2 over 6 holes. Total score? Average score per hole?

Show your work:

Total score: _____ Average per hole: _____

(24) The product of three consecutive integers is −120. Find all three integers. Is there more than one set of answers?

Show your work:

Answer: _____

SPIRAL REVIEW (5 problems)

↻ Spiral Review — Week 7th grade

(25) Find the GCF of 48 and 72.

Answer: _____

↻ Spiral Review — Week 7th grade

(26) Write 0.875 as a fraction in simplest form.

Answer: _____

↻ Spiral Review — Week 7th grade

27 A car travels 195 miles in 3 hours. Unit rate?

Answer: _____

↻ Spiral Review — Week 7th grade

28 Find the area of a triangle: base 14 cm, height 9 cm.

Answer: _____

↻ Spiral Review — Week 7th grade

29 Write $\frac{5}{8}$ as a decimal and as a percent.

Answer: _____

★ CHALLENGE — OPTIONAL

The product of three consecutive integers is −120. Find all three integers. Is there more than one set of answers?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

_____

Parent/guardian sign-off: _____ Date: _____

Week 2 of 9

Absolute value, order of operations & properties

WEEK 2 OF 9

Name: _____ Date completed: _____

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Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. $|-15| =$ _____ $|8| =$ _____

   Answer: _____

2. $-3 + 4 \times 2 =$ _____

   Answer: _____

3. $-3^2 =$ _____ $(-3)^2 =$ _____

   Answer: _____

4. Name the property: $4(x + 3) = 4x + 12$

   Answer: _____

5. Name the property: $3 + 7 = 7 + 3$

   Answer: _____

CORE PRACTICE (7 problems)

6. $3^2 - (-4) \times 2 + 1 =$ _____

   Answer: _____

7. $[(-5) + 3] \times [4 - (-2)] =$ _____

   Answer: _____

8. $-4[3 - (2 - 8)] + (-1)^2 =$ _____

   Answer: _____

9. Use the distributive property: $6(3x - 4) =$ _____

   Answer: _____

10. Use the distributive property: $-3(2x + 5) =$ _____

    Answer: _____

11. Use the distributive property mentally: $7 \times 98 = 7 \times (100 - 2) =$ _____

Answer: _____

(12) $(-2)^3 \times (-1)\&sup4; + 4^2 \div 2 =$ _____

Answer: _____

WORD PROBLEMS (3 problems)

(13) Evaluate: $2(x - 3)^2 - 4x$ when $x = -1$. Show every step.

Show your work:

Answer: _____

(14) A quiz: +5 for correct, −2 for incorrect, 0 for skipped. 8 correct, 4 incorrect, 3 skipped. Write and evaluate an expression.

Show your work:

Expression: _____ Score: _____

(15) The formula for temperature conversion: $F = \frac{9}{5}C + 32$. Find F when $C = -20$. Find C when $F = -4$.

Show your work:

F when C=−20: _____ C when F=−4: _____

At 60 minutes: circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) Insert parentheses to make true: $-3 + 4 \times 2 - 1 = 3$

(17) Simplify: $-|3 - 8| + |-4 - (-1)| =$ _____

(18) Is $|a - b| = |b - a|$ always true? Explain and give an example.

(19) Evaluate: $3 - 2[(-4)^2 - 3(5 - 8)] =$ _____

(20) If $|2x - 3| = 7$, what are the possible values of x?

(21) Show that 4 × 25 × 13 = 1,300 using the commutative and associative properties. Which numbers did you group first and why?

_____

MULTI-STEP WORD PROBLEMS (3 problems)

(22) The formula d = |x⊂2; − x⊂1;| gives distance on a number line. Find the distance between: −7 and 4; −3.5 and −8.25; $-\frac{1}{2}$ and $\frac{3}{4}$.

Show your work:

−7 to 4: _____ −3.5 to −8.25: _____ −½ to ¾: _____

(23) A student solves 2(x + 3) = 14 by first dividing both sides by 2, then subtracting 3. Name the property used in each step. What is x?

Show your work:

Step 1 property: _____ Step 2 property: _____ x: _____

(24) Evaluate $5x^2 - 3x + 2$ for x = −2, x = 0, and x = 3. Which value gives the smallest result?

Show your work:

x=−2: _____ x=0: _____ x=3: _____ Smallest: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 1**

(25) −4 × (−3) × (−2) = _____

Answer: _____

↻ **Spiral Review — Week 1**

(26) $-1\frac{2}{3} \div \frac{5}{6}$ = _____

Answer: _____

↻ **Spiral Review — Week 7th grade**

(27) Find the circumference of a circle with diameter 10 cm. (π ≈ 3.14)

Answer: _____

↻ **Spiral Review — Week 7th grade**

28 Write 72% as a fraction and decimal.

Answer: _____

↻ Spiral Review — Week 7th grade

29 Find the LCM of 6, 8, and 12.

Answer: _____

★ CHALLENGE — OPTIONAL

Solve: $|3x - 6| = 12$. Then verify both solutions. What do the two solutions mean graphically on a number line?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 3 of 9

Proportional relationships & percent

WEEK 3 OF 9

Name: _____ Date completed: _____

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Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. A car travels 180 miles in 3 hours. What is the unit rate?

   Answer: _____

2. Are 4:6 and 10:15 proportional? Show how you know.

   Answer: _____

3. What is 35% of 80?

   Answer: _____

4. A $60 item is 25% off. What is the sale price?

   Answer: _____

5. Complete: $\frac{3}{5} = \frac{?}{35}$

   Answer: _____

CORE PRACTICE (7 problems)

6. A recipe uses 2.5 cups sugar for 5 cups flour. How much sugar for 8 cups flour?

   Answer: _____

7. A store marks up a $48 item by 35%. What is the selling price?

   Answer: _____

8. Sales tax is 7.5%. Total cost of a $240 item?

   Answer: _____

9. A $180 bike is on sale for $135. What is the percent discount?

   Answer: _____

10. You invest $500 and earn 4% simple interest per year. How much interest after 3 years? What is the total value?

    Answer: _____

11 18 is what percent of 72?

Answer: _____

12 A quantity increases by 20% then decreases by 20%. Is the result the same as the original? Show with an example.

Answer: _____

WORD PROBLEMS (3 problems)

13 A car uses 4 gallons per 100 miles. Gas costs $3.85/gallon. How much does a 375-mile trip cost?

Show your work:

Answer: _____

14 A phone originally costs $720. Discounted 15%, then 8% sales tax on the sale price. Final cost? How much saved?

Show your work:

Final cost: _____ Savings: _____

15 A store buys a jacket for $65 and sells for $97.50. Percent markup? If it goes on sale 20% off, what is the sale price?

Show your work:

Percent markup: _____ Sale price: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

16 A quantity increases by 20% then decreases by 20%. Is the result the same as the original? Show with an example.

17 Two workers earn in a 5:8 ratio. Together they earn $3,900. How much does each earn?

(18) Simple interest: I = Prt. If P = \$1,200, r = 5%, t = 2.5 years, find I and the total amount.

(19) A price increased from \$45 to \$54. What is the percent increase? If it decreased back to \$45, what was the percent decrease from \$54?

(20) In a proportion $\frac{x}{12} = \frac{15}{20}$, find x. Then find x if $\frac{x+2}{8} = \frac{3}{4}$.

(21) A store has two sale options on a \$200 item: (A) 40% off, or (B) 25% off then 20% off. Which is the better deal? Show all work.

MULTI-STEP WORD PROBLEMS (3 problems)

(22) Two cars leave the same point. Car A: 55 mph east. Car B: 65 mph west. How far apart after 4 hours? After how many hours will they be 480 miles apart?

Show your work:

After 4 hours: _____ Hours for 480 miles: _____

(23) A store has a 'buy 2 get 1 free' deal on \$18 items. You need 9 items. How much do you pay? What is the effective percent discount per item?

Show your work:

Total cost: _____ Effective discount: _____

(24) A school is 65% students and 35% adults. There are 1,400 people total. How many students? If 12 more adults join, what is the new percent of adults?

Show your work:

Students: _____ New percent adults: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 2**

(25) $-|-6+2| + 3^2 \div (-3) =$ _____

Answer: _____

↻ **Spiral Review — Week 2**

(26) Explain the difference between -5^2 and $(-5)^2$.

Answer: _____

↻ Spiral Review — Week 1

(27) $-2\frac{1}{2} + 1\frac{3}{4} =$ _____

Answer: _____

↻ Spiral Review — Week 1

(28) Order from least to greatest: -2.5, $-\frac{5}{2}$, -2.49, -3

Answer: _____

↻ Spiral Review — Week 7th grade

(29) Write 0.875 as a fraction in simplest form.

Answer: _____

★ CHALLENGE — OPTIONAL

A store has two sale options on a $200 item: (A) 40% off, or (B) 25% off then another 20% off. Which is the better deal? Show all work and explain why they aren't the same.

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 4 of 9

Writing, evaluating & simplifying expressions

WEEK 4 OF 9

Name: _____ Date completed: _____

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Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Evaluate $5x - 3$ when $x = -4$.

   Answer: _____

2. Evaluate $2a^2 + a - 1$ when $a = 3$.

   Answer: _____

3. Simplify: $3x + 5x =$ _____

   Answer: _____

4. Simplify: $3(2x - 4) =$ _____

   Answer: _____

5. Simplify: $4x + 3y - 2x + y =$ _____

   Answer: _____

CORE PRACTICE (7 problems)

6. Evaluate $3x^2 - 2x + 5$ when $x = -2$.

   Answer: _____

7. Simplify: $3(2x - 4) + 5x - 7 =$ _____

   Answer: _____

8. Simplify: $-2(3x + 1) - (x - 4) =$ _____

   Answer: _____

9. Simplify: $4(x + 2) - 3(x - 1) =$ _____

   Answer: _____

10. Simplify: $5(2a - b) + 3(a + 4b) =$ _____

    Answer: _____

11. Factor: $12x + 8 =$ _____ (write as a product)

Answer: _____

(12) If $f(x) = 2x^2 - 3x + 1$, find $f(0)$, $f(2)$, and $f(-1)$.

Answer: _____

WORD PROBLEMS (3 problems)

(13) A rectangle has length $(3x + 2)$ and width $(x + 5)$. Write a simplified expression for the perimeter. Find it when $x = 4$.

Show your work:

Simplified perimeter: _____ When x=4: _____

(14) A phone plan costs \$30/month plus \$0.08/text. Write an expression. Cost for 120 texts? For 500 texts?

Show your work:

Expression: _____ 120 texts: _____ 500 texts: _____

(15) The height of a ball (feet): $h = -16t^2 + 48t + 4$, where t is seconds. Find h when $t = 0$, $t = 1$, and $t = 2$.

Show your work:

t=0: _____ t=1: _____ t=2: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) Simplify: $2[3x - (4x + 1)] + 5x =$ _____

(17) $\frac{1}{2}(4x - 6) + \frac{2}{3}(3x + 9) =$ _____

(18) Factor completely: $6x^2 + 9x =$ _____

(19) Show that $(x + a)(x + b) = x^2 + (a+b)x + ab$ by expanding. Then compute $(x + 3)(x + 5)$.

(20) Evaluate $(x + y)^2$ and $x^2 + y^2$ when $x = 3$, $y = 4$. Are they equal? What is the difference?

(21) A company's profit: $P = R - C$. If $R = 4.5n$ and $C = 2n + 120$, write a simplified expression for P. Evaluate when $n = 60$ units.

MULTI-STEP WORD PROBLEMS (3 problems)

(22) A square has side $(2x + 3)$. Write simplified expressions for perimeter and area. Find both when $x = 5$.

Show your work:

Perimeter expression: _____ Area expression: _____ Values at x=5: _____

(23) Two rectangles: A has length $(3x + 1)$ and width 2. B has length $(x + 5)$ and width 3. Write a simplified expression for the difference in their areas. Find the difference when $x = 6$.

Show your work:

Expression for difference: _____ When x=6: _____

(24) A company's revenue is $8(x + 50)$ dollars and costs are $3(2x + 40)$ dollars. Write a simplified expression for profit. When is profit positive?

Show your work:

Profit expression: _____ When profit > 0: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 3**

(25) A store marks up a $48 item by 35%. Selling price?

Answer: _____

↻ **Spiral Review — Week 3**

(26) 18 is what percent of 72?

Answer: _____

↻ **Spiral Review — Week 2**

(27) $3^2 - (-4) \times 2 + 1 =$ _____

Answer: _____

↻ Spiral Review — Week 1

(28) $-4 \times (-3) \times (-2) =$ _____

Answer: _____

↻ Spiral Review — Week 7th grade

(29) Find the GCF of 48 and 72.

Answer: _____

★ CHALLENGE — OPTIONAL

If $f(x) = x^2 - 3x + 2$, for what values of x does $f(x) = 0$? *(Hint: try integers between −2 and 4.)* What do these values represent graphically?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 5 of 9

Solving equations — one-step through multi-step

WEEK 5 OF 9

Name: _____ Date completed: _____

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Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Solve: $x + 9 = 4$. $x =$ _____
   Answer: _____
2. Solve: $-4x = 28$. $x =$ _____
   Answer: _____
3. Solve: $2x + 5 = 13$. $x =$ _____
   Answer: _____
4. Solve: $3(x + 2) = 18$. $x =$ _____
   Answer: _____
5. Solve: $5x - 3 = 2x + 12$. $x =$ _____
   Answer: _____

CORE PRACTICE (7 problems)

6. Solve: $-5x + 12 = -8$. $x =$ _____
   Answer: _____
7. Solve: $\frac{2x + 1}{3} = 5$. $x =$ _____
   Answer: _____
8. Solve: $3(2x - 4) = 2(x + 6)$. $x =$ _____
   Answer: _____
9. Solve: $0.5(4x - 2) = 3x - 4$. $x =$ _____
   Answer: _____
10. Solve: $4(x + 3) - 2(x - 1) = 18$. $x =$ _____
    Answer: _____
11. Solve: $3x + 2(x - 5) = 5(x - 2)$. What happens? What does this mean?

Answer: _____

(12) Write and solve: 'Twice a number decreased by 7 is −15.'

Answer: _____

WORD PROBLEMS (3 problems)

(13) Sarah has $45 and earns $8/hr babysitting. She wants to buy a $93 jacket. Write and solve an equation for hours needed.

Show your work:

Equation: _____ Answer: _____

(14) The sum of three consecutive integers is 51. Write and solve an equation. What are the three integers?

Show your work:

Equation: _____ Integers: _____

(15) A triangle has angles x, 2x + 10, and 3x − 4. The sum of angles in a triangle is 180°. Find each angle.

Show your work:

Equation: _____ Each angle: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) Solve: $3[2 - (x + 4)] = -3x + 1$. $x =$ _____

(17) Solve: $\frac{x}{2} + \frac{x}{3} = 10$. $x =$ _____

(18) Solve: $0.3(x + 4) = 0.5x - 0.2$. $x =$ _____

(19) Write and solve: 'Five more than twice a number equals three less than four times the number.'

(20) The sum of two numbers is 25 and their difference is 7. Find both numbers.

(21) Two sisters: older is 3 times the younger. In 5 years the older will be twice the younger. How old are they now?

MULTI-STEP WORD PROBLEMS (3 problems)

(22) Gym A: $40 sign-up + $25/month. Gym B: $15 sign-up + $30/month. After how many months are total costs equal? Which is cheaper for 18 months?

Show your work:

Equation: _____ Equal at month: _____ Cheaper for 18 months: _____

(23) A school play: adult tickets $8, student tickets $5. 200 tickets sold, $1,180 collected. How many of each?

Show your work:

Equation: _____ Adult tickets: _____ Student tickets: _____

(24) Two trains leave stations 480 miles apart traveling toward each other. Train A: 65 mph, Train B: 75 mph. When do they meet? How far has each traveled?

Show your work:

Equation: _____ Hours: _____ Train A distance: _____ Train B distance: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 4**

(25) Simplify: $3(2x - 4) + 5x - 7$.

Answer: _____

↻ **Spiral Review — Week 4**

(26) Factor: $12x + 8$.

Answer: _____

↻ **Spiral Review — Week 3**

(27) A store marks up a $48 item by 35%. Selling price?

Answer: _____

↻ Spiral Review — Week 2

28 $3^2 - (-4) \times 2 + 1 =$ _____

Answer: _____

↻ Spiral Review — Week 2

29 $(-2)^3 \times (-1)$&sup4; $+ 4^2 \div 2 =$ _____

Answer: _____

★ CHALLENGE — OPTIONAL

The sum of four consecutive odd integers is −8. Find all four integers. Show your equation and solution.

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 6 of 9

Inequalities

WEEK 6 OF 9

Name: _____ Date completed: _____

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Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Write in words: $x > -3$

   Answer: _____

2. Solve: $x + 5 > 9$. $x >$ _____

   Answer: _____

3. Solve: $2x \leq 14$. $x \leq$ _____

   Answer: _____

4. Solve: $x - 4 \geq -6$. $x \geq$ _____

   Answer: _____

5. When you multiply or divide an inequality by a negative number, what happens to the inequality sign?

   Answer: _____

CORE PRACTICE (7 problems)

6. Solve: $-3x > 12$. Describe the solution.

   Answer: _____

7. Solve: $2x + 5 \leq -3$. $x \leq$ _____

   Answer: _____

8. Solve: $-4x + 1 \geq 13$. $x \leq$ _____

   Answer: _____

9. Solve: $3(x - 2) < 9$. $x <$ _____

   Answer: _____

10. Describe the graph of $x \geq -2$ on a number line. Is the endpoint open or closed?

    Answer: _____

(11) Write an inequality for: 'A number is at most 15 but more than −3.'

Answer: _____

(12) Solve: $4 - 2x > -6$. $x <$ _____

Answer: _____

WORD PROBLEMS (3 problems)

(13) You need at least $75 for a concert ticket. You have $32 and earn $8.50/hr. Write and solve an inequality for hours needed.

Show your work:

Inequality: _____ Answer: _____

(14) A student needs a mean score of at least 80 across 5 tests. She scored 72, 85, 78, and 90. What score does she need on the 5th test?

Show your work:

Inequality: _____ Answer: _____

(15) A box can hold at most 50 pounds. You have 18 pounds inside. Write and solve an inequality for how many more pounds m you can add.

Show your work:

Inequality: _____ Answer: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) Solve: $-2(3x - 1) \geq 4(x + 2)$. $x \leq$ _____

(17) Solve: $\frac{x}{3} + 2 > \frac{x}{2} - 1$. $x <$ _____

(18) Write and solve a compound inequality: 'x is greater than −3 AND less than 5.'

(19) What values of x satisfy both $x + 3 > 1$ AND $2x \leq 8$ simultaneously?

(20) Solve and graph on a number line: $3 \leq 2x + 1 \leq 11$. What integers satisfy this?

(21) Solve: $|2x - 3| < 7$. Write as a compound inequality. What integers satisfy it?

MULTI-STEP WORD PROBLEMS (3 problems)

(22) A phone plan: \$35/month + \$0.05/text. Budget: \$50/month. Write and solve an inequality for max texts. Can you send 250 texts?

Show your work:

Inequality: _____ Max texts: _____ 250 possible?: _____

(23) Car rental: \$25/day + \$0.12/mile. You have \$85. Write and solve an inequality for max miles if renting for 1 day. If renting for 2 days?

Show your work:

1-day inequality: _____ Max miles 1 day: _____ Max miles 2 days: _____

(24) You need at least 360 points total on 4 tests. You scored 88, 79, and 92. What score range on the 4th test meets your goal?

Show your work:

Inequality: _____ Score range: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 5**

(25) Solve: $3(2x - 4) = 2(x + 6)$.

Answer: _____

↻ **Spiral Review — Week 5**

(26) The sum of 3 consecutive integers is 51. Find them.

Answer: _____

↻ **Spiral Review — Week 4**

(27) Simplify: $2[3x - (4x+1)] + 5x$.

Answer: _____

↻ Spiral Review — Week 3

(28) A store marks up a $65 item by 35%. Selling price?

Answer: _____

↻ Spiral Review — Week 2

(29) $-4[3 - (2 - 8)] + (-1)^2 =$ _____

Answer: _____

★ CHALLENGE — OPTIONAL

Solve: $|2x - 3| < 7$. Write the solution as a compound inequality and describe it on a number line. What integers satisfy the inequality?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 7 of 9

Coordinate plane & graphing

WEEK 7 OF 9

Name: _____ Date completed: _____

> **No calculators this summer.** Work by hand — that's where the learning happens. If you hit **60 minutes**, circle where you stopped and put the packet away. You're done for the week.

Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Name the quadrant: A(3,−4) ___ B(−2,5) ___ C(−1,−3) ___ D(4,0) ___

   Answer: _____

2. What are the coordinates of a point 5 units left and 3 units down from (−1,4)?

   Answer: _____

3. What is the distance between (0,5) and (0,−3)?

   Answer: _____

4. What is the distance between (−4,2) and (3,2)?

   Answer: _____

5. Reflect (−3,4) over the x-axis. New coordinates: _____

   Answer: _____

CORE PRACTICE (7 problems)

6. Three corners of a rectangle: (1,−2), (5,−2), (5,3). What is the fourth corner? What is the area?

   Answer: _____

7. What is the midpoint of the segment from (−4,6) to (2,−2)?

   Answer: _____

8. A pattern: (1,3), (2,5), (3,7), (4,9). What are the next two points? What is the rule?

   Answer: _____

9. Reflect (−3,4) over the y-axis. Then reflect that point over the x-axis. Final coordinates?

   Answer: _____

10. The points (1,2), (3,6), (5,10) are given. Show they are collinear by checking the slope between each pair.

    Answer: _____

(11) Find the distance between (−3,1) and (5,7) using: d = √[(x⊂2;−x⊂1;)² + (y⊂2;−y⊂1;)²]. Leave in √ form or approximate.

Answer: _____

(12) The midpoint of segment AB is (2,3). Point A is (−1,5). What are the coordinates of B?

Answer: _____

WORD PROBLEMS (3 problems)

(13) Town A is at (2,5), Town B is at (2,−3). Each unit = 1 mile. How far apart? If you drive from A to B to the origin, total distance?

Show your work:

A to B: _____ Total trip: _____

(14) A game board: treasure at (6,8). Player 1 starts at (0,0), Player 2 at (10,2). Who is closer to the treasure?

Show your work:

P1 distance: _____ P2 distance: _____ Who is closer: _____

(15) A delivery driver: starts at (0,0), drives to (3,4), then to (3,−2), then back to (0,0). Each unit = 1 mile. Find total distance.

Show your work:

Leg 1: _____ Leg 2: _____ Leg 3: _____ Total: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) A triangle has vertices A(0,0), B(6,0), C(3,4). Find its area. Is it a right triangle?

(17) Point P at (2,−3). Translate: right 4, up 6. Then reflect over x-axis. Final coordinates?

(18) A square has vertices at (0,0) and (5,5) as opposite corners. Find the other two vertices and the area.

19. A rectangle has vertices at (−2,1), (4,1), (4,−3), (−2,−3). All coordinates doubled. New vertices? How do area and perimeter compare?

20. A city planner marks parks at A(0,0), B(0,4), C(3,0). Each unit = 1 km. What kind of triangle? What is the perimeter?

21. Two friends walk from (0,0). Friend A walks to (4,0), Friend B to (0,3). How far is each from the start? How far apart are they?

MULTI-STEP WORD PROBLEMS (3 problems)

22. Three points form a right triangle: A(−2,1), B(4,1), C(4,5). Verify it is a right triangle. Find area and perimeter. Translate 3 units left and 2 units down — new coordinates?

Show your work:

Right triangle verification: _____ Area: _____ Perimeter: _____

New coordinates: _____

23. A pattern: (1,4), (2,7), (3,10), (4,13). Is this linear? Write the rule. Predict the value when x = 10.

Show your work:

Linear?: _____ Rule: _____ Prediction: _____

24. A rectangle has vertices at (−3,−2), (4,−2), (4,5), (−3,5). Find area and perimeter. What are the coordinates of the center?

Show your work:

Area: _____ Perimeter: _____ Center: _____

SPIRAL REVIEW (5 problems)

↻ Spiral Review — Week 6

25. Solve: $-2(3x - 1) \geq 4(x + 2)$.

Answer: _____

↻ Spiral Review — Week 6

26. Write and solve: you need at least $75, have $32, earn $8.50/hr.

Answer: _____

↻ Spiral Review — Week 5

(27) Solve: $3(2x - 4) = 2(x + 6)$.

Answer: _____

↻ Spiral Review — Week 4

(28) Simplify: $3(2x - 4) + 5x - 7$.

Answer: _____

↻ Spiral Review — Week 4

(29) Evaluate $3x^2 - 2x + 5$ when $x = -2$.

Answer: _____

★ CHALLENGE — OPTIONAL

Three points form a right triangle: A(1,1), B(5,1), C(5,4). Confirm it is a right triangle, find its area and perimeter. Then translate the entire triangle 3 units left and 2 units up — what are the new coordinates?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 8 of 9

Slope & linear equations (y = mx + b)

WEEK 8 OF 9

Name: _____ Date completed: _____

> **No calculators this summer.** Work by hand — that's where the learning happens. If you hit **60 minutes**, circle where you stopped and put the packet away. You're done for the week.

Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Find the slope: (2,3) and (6,11). m = _____

   Answer: _____

2. Find the slope: (−1,4) and (3,−4). m = _____

   Answer: _____

3. What is the slope of a horizontal line? A vertical line?

   Answer: _____

4. Identify slope and y-intercept: $y = 3x - 5$.

   Answer: _____

5. Does (2,7) lie on the line $y = 3x + 1$? Show your check.

   Answer: _____

CORE PRACTICE (7 problems)

6. Write the equation of a line with slope 2 and y-intercept −3.

   Answer: _____

7. Write the equation of a line through (0,4) and (3,−2).

   Answer: _____

8. Rewrite in slope-intercept form: $2x + 3y = 12$.

   Answer: _____

9. A line has slope $\frac{2}{3}$ and passes through (0,−4). Write its equation and find y when x = 9.

   Answer: _____

10. Two lines: $y = 2x + 1$ and $y = 2x - 5$. Are they parallel, perpendicular, or neither?

    Answer: _____

11. A line passes through (−2,5) and (4,−1). Write the equation in slope-intercept form.

Answer: _____

(12) Data: (1,4), (2,7), (3,10), (4,13). Is this linear? Write the equation. Predict x = 10.

Answer: _____

WORD PROBLEMS (3 problems)

(13) A car rental: $30 plus $0.15 per mile. Write a linear equation for total cost y in terms of miles x. What is the slope? What does it represent? Cost for 200 miles?

Show your work:

Equation: _____ Slope meaning: _____ Cost for 200 miles: _____

(14) A tank has 80 gallons and drains at 4 gallons per minute. Write an equation for gallons y after x minutes. When will the tank be empty?

Show your work:

Equation: _____ When empty: _____

(15) A student saves $25/week and already has $120. Write an equation. After how many weeks will she have $370?

Show your work:

Equation: _____ Weeks: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) Write the equation of a line through (−2,3) and (4,−9).

(17) Write the equation of a line through (3,−1) with slope $-\frac{2}{3}$.

(18) Are the lines $3x - 2y = 6$ and $6x - 4y = 10$ parallel, the same line, or intersecting? Rewrite both in slope-intercept form to decide.

(19) A line passes through (4,3) and has slope 0. Write its equation. What does this line look like?

(20) Two lines have the same y-intercept but different slopes. How many times do they intersect? Where?

(21) A line passes through A(1,3) and B(5,11). A second line is perpendicular to AB and passes through B. Write the equation of each line.

MULTI-STEP WORD PROBLEMS (3 problems)

(22) At 8 AM a hiker is 5 miles from camp. She hikes toward camp at 3 mph. Write an equation for distance d from camp after t hours. When does she arrive? How far at 10:30 AM?

Show your work:

Equation: _____ Arrival time: _____ At 10:30 AM: _____

(23) Company A: $50 + $20/hour. Company B: $30/hour. Write equations. After how many hours are costs equal? Which is cheaper for a 4-hour job?

Show your work:

Company A equation: _____ Company B equation: _____ Equal at: _____

Cheaper for 4 hours: _____

(24) Data: (1,4), (2,7), (3,10), (4,13). Show this is linear by checking slope. Write the equation. Predict the value when x = 10.

Show your work:

Slope check: _____ Equation: _____ Prediction at x=10: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 7**

(25) Find the midpoint of (−4,6) and (2,−2).

Answer: _____

↻ **Spiral Review — Week 7**

(26) Find the distance between (−3,1) and (5,7).

Answer: _____

↻ **Spiral Review — Week 6**

27 Solve: $-2(3x - 1) \geq 4(x + 2)$.

Answer: _____

↻ Spiral Review — Week 5

28 Solve: $3(2x - 4) = 2(x + 6)$.

Answer: _____

↻ Spiral Review — Week 4

29 Simplify: $-2(3x+1) - (x - 4)$.

Answer: _____

★ CHALLENGE — OPTIONAL

A line passes through A(1,3) and B(5,11). A second line is perpendicular to AB and passes through B. Write the equation of each line. Where does the second line cross the x-axis?

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____

Week 9 of 9

Functions & mixed pre-algebra review

WEEK 9 OF 9

Name: _____ Date completed: _____

> **No calculators this summer.** Work by hand — that's where the learning happens. If you hit **60 minutes**, circle where you stopped and put the packet away. You're done for the week.

Part 1 *~25–30 minutes · 15 problems*

WARM-UP (5 problems)

1. Is this a function? Input: {1,2,3,4} Output: {5,5,7,9}. Explain.

   Answer: _____

2. Find the slope between (−2,5) and (4,−1).

   Answer: _____

3. Solve: $3(2x - 4) = 2(x + 6)$.

   Answer: _____

4. Evaluate $f(x) = -2x + 7$ when $x = -3$.

   Answer: _____

5. Solve the inequality: $-4x + 5 < 17$.

   Answer: _____

CORE PRACTICE (7 problems)

6. Which are functions? (A) {(1,2),(2,3),(3,4)}; (B) {(1,2),(1,3),(2,4)}; (C) {(1,2),(2,2),(3,2)}. Explain each.

   Answer: _____

7. For $f(x) = 3x^2 - 2x + 1$, find $f(0)$, $f(2)$, $f(-1)$.

   Answer: _____

8. A function: $y = -\frac{1}{2}x + 4$. If $x = -6$, $y =$ ___; if $y = 1$, $x =$ ___

   Answer: _____

9. Write the equation of a line through (0,−3) with slope $\frac{2}{3}$. Find three more points on this line.

   Answer: _____

10. Simplify: $4(3x - 2) - 2(x + 5) + 3x =$ _____

    Answer: _____

(11) Solve: $3x - \frac{1}{4} = x + \frac{3}{2}$. x = _____

Answer: _____

(12) What is the domain and range of the function {(1,3),(2,5),(3,7),(4,9)}?

Answer: _____

WORD PROBLEMS (3 problems)

(13) A parking garage fee: $3 flat fee plus $2/hour. Write the function rule f(h). Find f(0), f(3), f(8). Maximum hours for $25?

Show your work:

Function rule: _____ f(0), f(3), f(8): _____ Max hours for $25: _____

(14) Ana earns $12/hour. Ben earns $9/hour + $30 bonus/week. Write functions for each. When do they earn the same in a week? Who earns more for a 15-hour week?

Show your work:

Ana's function: _____ Ben's function: _____ Equal at: _____

15-hour comparison: _____

(15) A rocket's height: $h = -5t^2 + 40t$. Find h at t = 0, 2, 4, 6, 8. When is the rocket highest? When does it land?

Show your work:

Heights: _____ Highest at: _____ Lands at: _____

⏱ **At 60 minutes:** circle the last problem you completed and put the packet away. You're done for the week!

Part 2 *~25–30 minutes · 14 problems + optional challenge*

PUSHING FURTHER (6 problems)

These problems require more reasoning. Show all steps.

(16) If $f(x) = 2x + 3$ and $g(x) = x^2 - 1$, find f(g(2)) and g(f(2)). Are these equal?

(17) A function table: x: 1,2,3,4,5 and y: 3,7,11,15,19. Write the rule. Find y when x = 20.

(18) Solve the system: $y = 2x + 1$ and $y = -x + 7$. Verify by substituting.

(19) Solve: $2|x - 3| = 10$. List all solutions.

(20) A line has slope $\frac{3}{4}$. A perpendicular line passes through (0,5). Write both equations and find where they intersect.

(21) Function A: $f(x) = x^2 - 2x$. Function B: $g(x) = x + 6$. Find all x values where $f(x) = g(x)$. What do these represent graphically?

MULTI-STEP WORD PROBLEMS (3 problems)

(22) Two linear functions: $f(x) = 2x + 5$ (savings starting at \$5, saving \$2/day) and $g(x) = -x + 50$ (starting at \$50, spending \$1/day). When do they have equal amounts? Who has more after 20 days?

Show your work:

Equal at x=: _____ After 20 days: _____

(23) A rocket: $h = -5t^2 + 40t$. Find h at t = 0, 2, 4, 6, 8. When is the rocket highest? When does it land?

Show your work:

Heights: _____ Highest at: _____ Lands at: _____

(24) A linear function passes through (2,5) and (6,13). Write the equation. Is (10,21) on the line? Is (−1,−1)?

Show your work:

Equation: _____ (10,21) on line?: _____ (−1,−1) on line?: _____

SPIRAL REVIEW (5 problems)

↻ **Spiral Review — Week 8**

(25) Write the equation of a line through (−2,3) and (4,−9).

Answer: _____

↻ **Spiral Review — Week 5**

(26) Solve: $0.5(4x - 2) = 3x - 4$.

Answer: _____

↻ Spiral Review — Week 7

(27) Find the midpoint of (−4,6) and (2,−2).

Answer: _____

↻ Spiral Review — Week 6

(28) Solve: $-2(3x - 1) \geq 4(x + 2)$.

Answer: _____

↻ Spiral Review — Week 4

(29) Simplify: $2[3x - (4x+1)] + 5x$.

Answer: _____

★ CHALLENGE — OPTIONAL

A linear function f and a quadratic function g intersect at two points. $f(x) = x + 6$ and $g(x) = x^2 - 2x$. Find both intersection points by setting the functions equal. Verify both solutions.

Answer: _____

WEEKLY REFLECTION

What felt hardest this week? What felt easy or satisfying?

Parent/guardian sign-off: _____ Date: _____