



Halloween Math Worksheets

16 printable worksheets for kindergarten through high school, each with an answer key. Counting and addition for little ones, riddles and fractions for grades 3 to 5, integers, percents and a mystery picture for middle school, and quadratics, probability and exponential growth for high school.

#	Worksheet	Level	Skill
1	Count the Pumpkins	Grades K-2	Counting to 15
2	Candy Addition	Grades K-2	Addition within 20
3	Spooky Subtraction	Grades K-2	Subtraction within 20
4	Bat Comparisons	Grades K-2	Comparing numbers and skip counting
5	Monster Multiplication	Grades 3-5	Multiplication facts to 12×12
6	Trick-or-Treat Division	Grades 3-5	Division with remainders
7	Pumpkin Pie Fractions	Grades 3-5	Fractions of a shape and of a set
8	Haunted House Riddle	Grades 3-5	Multi-digit addition and subtraction
9	Graveyard Integers	Grades 6-8	Operations with integers
10	Costume Shop Sale	Grades 6-8	Percent discounts, tax and percent change
11	Equation Escape Room	Grades 6-8	One-step and two-step equations
12	Mystery Picture Plot	Grades 6-8	Coordinates in all four quadrants
13	Haunted House Systems	High School	Systems of linear equations
14	Pumpkin Launch	High School	Quadratic functions and the quadratic formula
15	Candy Bag Probability	High School	Probability and expected value
16	Zombie Outbreak	High School	Exponential growth and decay with logarithms

Print

Print on US Letter or A4 with "Fit to page" turned on. Black and white works fine.

Answer keys

Every worksheet has a matching answer key, starting on page 18.

Timing

Each sheet takes about 15 to 25 minutes. The riddle and picture sheets work well for early finishers.

Sharing

Free to print and share with your class, homeschool group or family. Please link to the page instead of reselling the files.

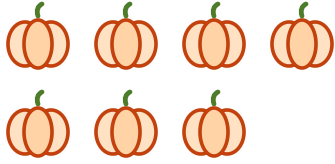
Count the Pumpkins

Grades K-2

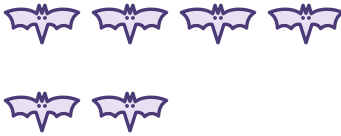
Count the pictures in each box. Write the number on the line.

Name _____

Date _____



How many? _____



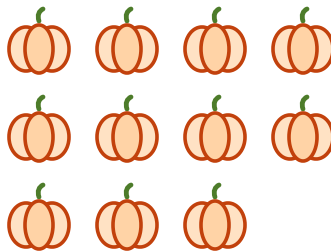
How many? _____



How many? _____



How many? _____



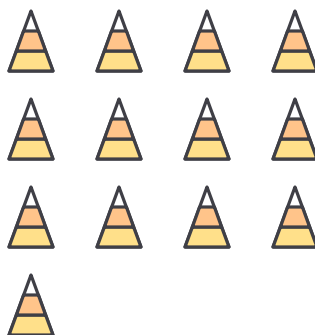
How many? _____



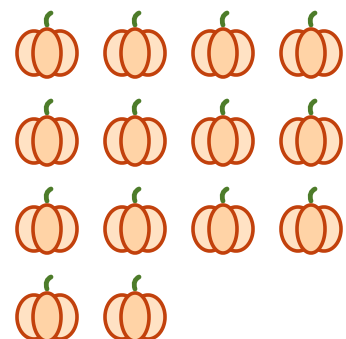
How many? _____



How many? _____



How many? _____



How many? _____

Candy Addition

Grades K-2

Add the candy corn in each row. Then solve the addition problems.

Name _____

Date _____

Part A: Add the pictures

$$\triangle + \triangle + \triangle + \triangle = \underline{\quad}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle + \triangle = \underline{\quad}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle + \triangle + \triangle = \underline{\quad}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle = \underline{\quad}$$

Part B: Add

1. $3 + 4 = \underline{\quad}$ 2. $11 + 8 = \underline{\quad}$ 3. $4 + 7 = \underline{\quad}$ 4. $12 + 6 = \underline{\quad}$

5. $11 + 4 = \underline{\quad}$ 6. $3 + 1 = \underline{\quad}$ 7. $8 + 3 = \underline{\quad}$ 8. $12 + 7 = \underline{\quad}$

9. $9 + 9 = \underline{\quad}$ 10. $7 + 8 = \underline{\quad}$ 11. $7 + 7 = \underline{\quad}$ 12. $7 + 2 = \underline{\quad}$

13. $10 + 5 = \underline{\quad}$ 14. $4 + 1 = \underline{\quad}$ 15. $8 + 2 = \underline{\quad}$ 16. $6 + 7 = \underline{\quad}$

Spooky Subtraction

Grades K-2

The crossed-out ghosts flew away. How many are left? Then solve the problems.

Name _____

Date _____

Part A: How many ghosts are left?

 $4 - 3 = \underline{\quad}$

 $5 - 2 = \underline{\quad}$

 $5 - 1 = \underline{\quad}$


 $8 - 2 = \underline{\quad}$

Part B: Subtract

1. $7 - 2 = \underline{\quad}$ 2. $14 - 4 = \underline{\quad}$ 3. $19 - 2 = \underline{\quad}$ 4. $17 - 1 = \underline{\quad}$

5. $9 - 6 = \underline{\quad}$ 6. $12 - 9 = \underline{\quad}$ 7. $7 - 3 = \underline{\quad}$ 8. $15 - 9 = \underline{\quad}$

9. $9 - 4 = \underline{\quad}$ 10. $13 - 8 = \underline{\quad}$ 11. $16 - 11 = \underline{\quad}$ 12. $14 - 3 = \underline{\quad}$

13. $14 - 10 = \underline{\quad}$ 14. $15 - 1 = \underline{\quad}$ 15. $19 - 7 = \underline{\quad}$ 16. $17 - 3 = \underline{\quad}$

Bat Comparisons

Grades K-2

Write $<$, $>$ or $=$ between the numbers. Then fill in the missing numbers.

Name _____

Date _____

Part A: Compare the numbers

1. 3 16

2. 2 3

3. 45 50

4. 23 23

5. 6 0

6. 46 42

7. 4 18

8. 12 23

9. 17 17

10. 15 46

11. 33 22

12. 42 49

Part B: Skip count

Count by 2s: 4 6 _____ 10 12 _____ 18

Count by 5s: 10 15 _____ 30 _____ 40 45

Count by 10s: 30 40 50 60 _____ 100

Monster Multiplication

Grades 3-5

Solve each multiplication fact. Try to finish all 40 in 5 minutes.

Name _____

Date _____

1. $2 \times 2 =$ _____ 2. $8 \times 9 =$ _____ 3. $6 \times 8 =$ _____ 4. $11 \times 12 =$ _____

5. $10 \times 3 =$ _____ 6. $9 \times 6 =$ _____ 7. $11 \times 9 =$ _____ 8. $11 \times 4 =$ _____

9. $7 \times 11 =$ _____ 10. $6 \times 3 =$ _____ 11. $5 \times 12 =$ _____ 12. $7 \times 2 =$ _____

13. $10 \times 5 =$ _____ 14. $7 \times 5 =$ _____ 15. $11 \times 6 =$ _____ 16. $8 \times 12 =$ _____

17. $5 \times 8 =$ _____ 18. $3 \times 4 =$ _____ 19. $10 \times 2 =$ _____ 20. $11 \times 5 =$ _____

21. $8 \times 2 =$ _____ 22. $12 \times 6 =$ _____ 23. $5 \times 5 =$ _____ 24. $6 \times 7 =$ _____

25. $7 \times 8 =$ _____ 26. $5 \times 6 =$ _____ 27. $8 \times 4 =$ _____ 28. $12 \times 7 =$ _____

29. $3 \times 9 =$ _____ 30. $9 \times 4 =$ _____ 31. $9 \times 7 =$ _____ 32. $4 \times 12 =$ _____

33. $2 \times 9 =$ _____ 34. $11 \times 2 =$ _____ 35. $11 \times 8 =$ _____ 36. $10 \times 8 =$ _____

37. $10 \times 6 =$ _____ 38. $3 \times 8 =$ _____ 39. $3 \times 11 =$ _____ 40. $6 \times 4 =$ _____

Trick-or-Treat Division

Grades 3-5

Read each problem. Divide, then write the remainder.

Name _____

Date _____

1. Lily has 33 pieces of candy to share equally among 7 trick-or-treaters. How many does each get, and how many are left over?
Each gets _____ Left over _____
2. Sofia has 78 glow sticks to share equally among 9 friends. How many does each get, and how many are left over?
Each gets _____ Left over _____
3. Aarav has 46 mini pumpkins to share equally among 8 tables. How many does each get, and how many are left over?
Each gets _____ Left over _____
4. Leo has 63 stickers to share equally among 6 classmates. How many does each get, and how many are left over?
Each gets _____ Left over _____
5. Emma has 52 caramel apples to share equally among 8 trays. How many does each get, and how many are left over?
Each gets _____ Left over _____
6. Maya has 22 spider rings to share equally among 4 party bags. How many does each get, and how many are left over?
Each gets _____ Left over _____
7. Zara has 25 chocolate bars to share equally among 6 cousins. How many does each get, and how many are left over?
Each gets _____ Left over _____
8. Noah has 91 candy corns to share equally among 8 jars. How many does each get, and how many are left over?
Each gets _____ Left over _____

Pumpkin Pie Fractions

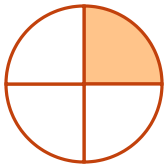
Grades 3-5

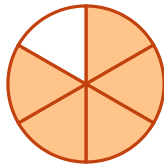
Write the fraction of each pie that is shaded. Then find the fraction of each group.

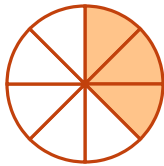
Name _____

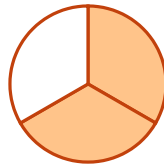
Date _____

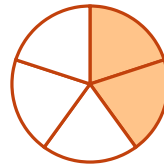
Part A: What fraction is shaded?

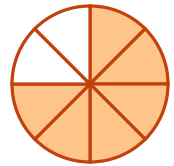












Part B: Fraction of a group

1. Aarav says $\frac{1}{3}$ of her 24 candies are lollipops. How many is that?
Answer: _____
2. Zara says $\frac{3}{4}$ of his 28 candies are chocolate. How many is that?
Answer: _____
3. Omar says $\frac{2}{5}$ of the 35 pumpkins on the farm are white. How many is that?
Answer: _____
4. Nora says $\frac{5}{6}$ of their 42 decorations are bats. How many is that?
Answer: _____
5. Arjun says $\frac{3}{8}$ of the 48 cupcakes have orange frosting. How many is that?
Answer: _____
6. Maya says $\frac{2}{3}$ of the 27 costumes in the shop are capes. How many is that?
Answer: _____

Haunted House Riddle

Grades 3-5

Solve each problem, find the answer in the code box and write its letter.
Then spell out the answer to the riddle.

Name _____

Date _____

What room does a ghost always stay out of?

1,305 = I 1,572 = L 1,574 = G 2,015 = F 2,839 = V 3,370 = R 3,639 = A
3,669 = O 4,154 = N 4,393 = M 4,811 = H 5,175 = E 5,533 = D 8,281 = T
8,458 = B 9,128 = C

1. $5,081 + 3,200 =$ _____

2. $5,304 - 493 =$ _____

3. $5,666 - 491 =$ _____

4. $4,285 - 2,713 =$ _____

5. $595 + 710 =$ _____

6. $6,116 - 3,277 =$ _____

7. $968 + 337 =$ _____

8. $2,104 + 2,050 =$ _____

9. $1,032 + 542 =$ _____

10. $6,066 - 2,696 =$ _____

11. $3,362 + 307 =$ _____

12. $1,176 + 2,493 =$ _____

13. $927 + 3,466 =$ _____

1 2 3 4 5 6 7 8 9 10 11 12 13

Graveyard Integers

Grades 6-8

Add, subtract, multiply and divide. Watch the signs.

Name _____

Date _____

Part A: Compute

1. $-15 - 4 =$ _____
2. $-1 - 8 =$ _____
3. $(-9) \times (-7) =$ _____
4. $7 \times (-1) =$ _____
5. $-44 \div 11 =$ _____
6. $12 + (-11) =$ _____
7. $-15 + (-10) =$ _____
8. $(-5) \times (-5) =$ _____
9. $(-13) \times 3 =$ _____
10. $(-3) \times 9 =$ _____
11. $-7 + 1 =$ _____
12. $-81 \div (-9) =$ _____
13. $-14 + 5 =$ _____
14. $24 \div (-8) =$ _____
15. $-2 - 3 =$ _____
16. $-8 - 8 =$ _____
17. $24 \div (-4) =$ _____
18. $-8 - 6 =$ _____
19. $5 \div (-5) =$ _____
20. $4 + (-6) =$ _____

Part B: Word problems

21. At 9 PM the graveyard was 4°F . By 3 AM the temperature had dropped 9 degrees. What was the temperature at 3 AM?
Answer: _____
22. By sunrise, the temperature from problem 21 rose 4 degrees. What was the temperature at sunrise?
Answer: _____
23. A bat roosts 13 feet below the cave entrance, at -13 feet. It flies up 9 feet. Where is it now?
Answer: _____
24. A haunted elevator starts on floor 6, goes down 9 floors, then up 4 floors. Which floor is it on?
Answer: _____

Costume Shop Sale

Grades 6-8

Use percents to work out each price. Show your work in the space.

Name _____

Date _____

1. A witch costume costs \$36.00. It is 25% off. What is the sale price?

Answer: _____

2. A vampire cape was \$48.00 and is now \$30.00. What percent is the discount?

Answer: _____

3. Face paint costs \$22.50 before an 8% sales tax. What is the total?

Answer: _____

4. A mask costs \$40.00. The shop takes 20% off, then an extra 10% off the new price. What do you pay?

Answer: _____

5. Is the deal in problem 4 the same as 30% off? Explain in one sentence.

Answer: _____

6. A bag of candy cost \$4.00 last year and \$5.00 this year. What is the percent increase?

Answer: _____

7. A pumpkin patch sold 360 pumpkins. 15% were white. How many white pumpkins were sold?
8. 27 of the 36 students in a class wore costumes. What percent is that?

Answer: _____

Answer: _____

Equation Escape Room

Grades 6-8

Solve each equation for x. Find x in the code box and write its letter. The letters answer the riddle.

Name _____

Date _____

What is a vampire's favorite fruit?

-8 = C -6 = I -5 = R 1 = E 2 = T 3 = D 4 = F 7 = B 8 = A 9 = N 10 = H 11 = K

1. $-2x + 9 = 0x - 7$ $x =$ _____

2. $-3x + 9 = -18$ $x =$ _____

3. $6x + 1 = 8x - 1$ $x =$ _____

4. $2x + 12 = -4$ $x =$ _____

5. $4(x + 5) = 28$ $x =$ _____

6. $-2(x + 11) = -38$ $x =$ _____

7. $-2(x + 4) = 2$ $x =$ _____

8. $x/3 + 9 = 7$ $x =$ _____

9. $3x - 12 = 15$ $x =$ _____

10. $-2x + 11 = 0x + 9$ $x =$ _____

1 2 3 4 5 6 7 8 9 10

Mystery Picture Plot

Grades 6-8

Plot each point on the grid and connect them in order with straight lines.

Name _____

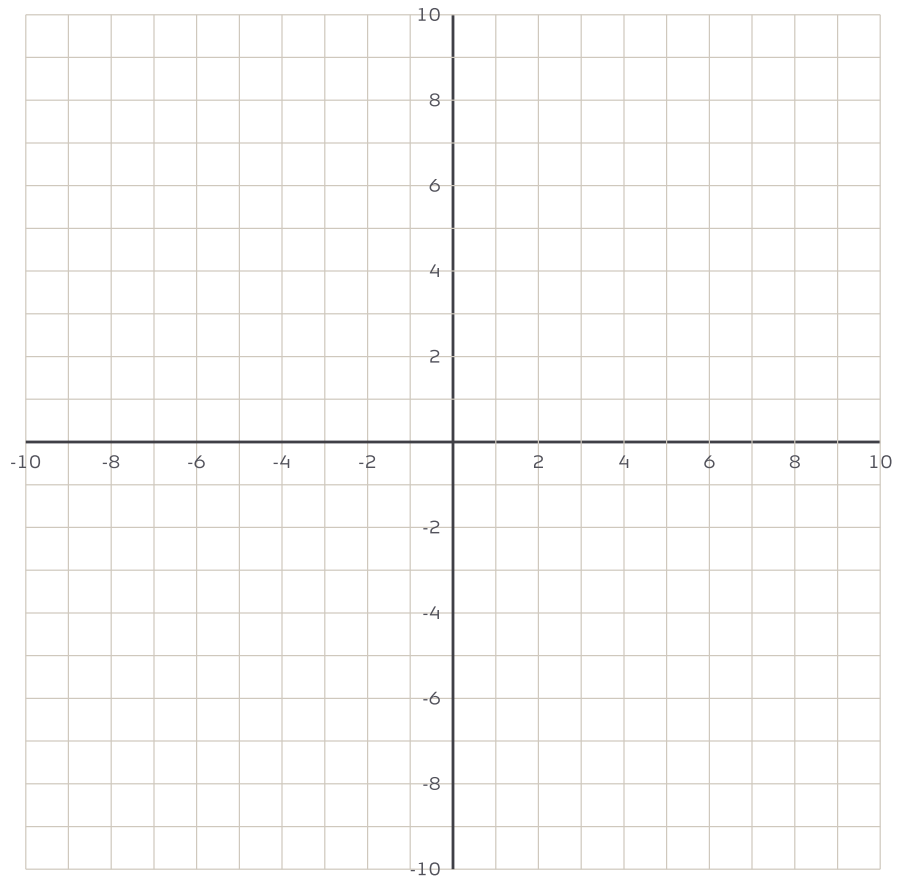
Date _____

Connect these points in order:

(0, 2) (1, 4)
(2, 2) (4, 3)
(6, 5) (9, 6)
(8, 3) (9, 1)
(7, 0) (6, -2)
(4, -1) (2, -3)
(0, -5) (-2, -3)
(-4, -1) (-6, -2)
(-7, 0) (-9, 1)
(-8, 3) (-9, 6)
(-6, 5) (-4, 3)
(-2, 2) (-1, 4)
(0, 2)

Then plot two dots for the eyes: (-1, 1) and (1, 1)

What did you draw?



Quadrant check

Pick one point from the list for each quadrant.

Quadrant I: _____

Quadrant II: _____

Quadrant III: _____

Quadrant IV: _____

Any point from the list in the right quadrant is correct. Points on an axis, like (0, 2), are not in any quadrant.

Haunted House Systems

High School

Write a system of two equations for each problem, then solve it.

Name _____

Date _____

1. A haunted house sold 180 tickets for \$1,864. Adult tickets cost \$12 and child tickets cost \$8. How many of each were sold?

Answer: _____

2. Three chocolate bars and two lollipops cost \$24. One chocolate bar and four lollipops cost \$18. Find the price of each (whole dollars).

Answer: _____

3. A witch mixes a 10% potion with a 40% potion to make 6 liters of a 20% potion. How many liters of each did she use?

Answer: _____

4. A ghost ship sails 24 miles downstream in 3 hours and 6 miles back upstream in 3 hours. Find the speed of the ship in still water and the speed of the current.

Answer: _____

5. Solve the system: $2x + 3y = -1$ and $x - y = -8$.

Answer: _____

6. Solve the system: $5x - 2y = 22$ and $3x + 4y = 8$.

Answer: _____

Pumpkin Launch

High School

A catapult launches pumpkins. Height h is in feet and time t is in seconds.
Round to 2 decimal places where needed.

Name _____

Date _____

	Height model	Time to top	Maximum height	Time to land
Launch A	$h(t) = -16t^2 + 64t + 6$	_____	_____	_____
Launch B	$h(t) = -16t^2 + 80t + 4$	_____	_____	_____
Launch C	$h(t) = -16t^2 + 96t + 10$	_____	_____	_____

Hint: the top of the arc is at $t = -b/(2a)$. The pumpkin lands when $h(t) = 0$.

Work space

4. Which launch stays in the air longest? How much longer than Launch A?

Answer: _____

5. For Launch A, when is the pumpkin exactly 54 feet high? Give both times.

Answer: _____

Candy Bag Probability

High School

Give each answer as a fraction in lowest terms unless the question asks for a count.

Name _____

Date _____

A trick-or-treat bag holds 6 chocolate bars, 4 lollipops, 5 gummy worms, 3 caramels. That is 18 candies in all. You pull candies without looking.

1. What is the probability of pulling a chocolate bar?

Answer: _____

2. What is the probability of not pulling a gummy worm?

Answer: _____

3. You pull one candy, eat it, then pull another. What is the probability both are chocolate bars?

Answer: _____

4. You pull a candy, put it back, and pull again. What is the probability of a lollipop and then a caramel?

Answer: _____

5. If you pull a candy and put it back 90 times, about how many lollipops would you expect?

Answer: _____

6. A spinner pays 3 candies on $\frac{1}{4}$ of spins, 1 candy on $\frac{1}{2}$ of spins and 0 candies otherwise. What is the expected number of candies per spin?

Answer: _____

Zombie Outbreak

High School

A zombie outbreak starts with 5 zombies, and the number doubles every 3 hours: $N(t) = 5 \cdot 2^{(t/3)}$, where t is in hours.

Name _____

Date _____

Part A: Complete the table

Hours	$t = 0$	$t = 3$	$t = 6$	$t = 12$	$t = 18$
Zombies	_____	_____	_____	_____	_____

Part B: Solve

2. After how many hours are there exactly 1,280 zombies?

Answer: _____

3. After how many hours are there 1,000 zombies? Round to one decimal place.

Answer: _____

4. A second town grows linearly: $L(t) = 5 + 40t$. Which town has more zombies at $t = 12$? At $t = 24$?

Answer: _____

5. A cure potion starts at 80% strength and loses half its strength every 5 days. What is its strength after 15 days?

Answer: _____

6. When does the potion first drop to 5% strength?

Answer: _____

Count the Pumpkins

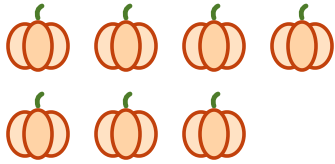
Answer key

Grades K-2

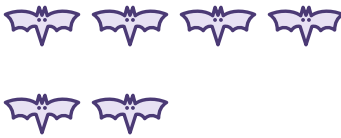
Count the pictures in each box. Write the number on the line.

Name _____

Date _____



How many? 7



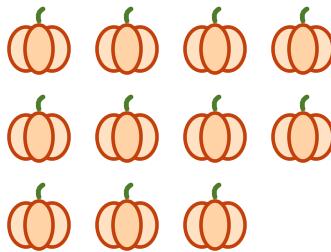
How many? 6



How many? 9



How many? 4



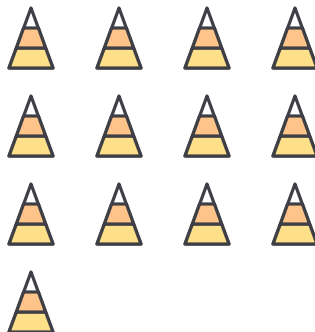
How many? 11



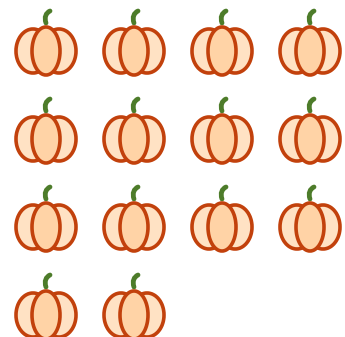
How many? 3



How many? 12



How many? 13



How many? 14

Candy Addition

Answer key

Grades K-2

Add the candy corn in each row. Then solve the addition problems.

Name _____

Date _____

Part A: Add the pictures

$$\triangle + \triangle + \triangle + \triangle = \underline{4}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle + \triangle = \underline{6}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle + \triangle = \underline{6}$$

$$\triangle + \triangle + \triangle + \triangle + \triangle = \underline{5}$$

Part B: Add

1. $3 + 4 = \underline{7}$ 2. $11 + 8 = \underline{19}$ 3. $4 + 7 = \underline{11}$ 4. $12 + 6 = \underline{18}$

5. $11 + 4 = \underline{15}$ 6. $3 + 1 = \underline{4}$ 7. $8 + 3 = \underline{11}$ 8. $12 + 7 = \underline{19}$

9. $9 + 9 = \underline{18}$ 10. $7 + 8 = \underline{15}$ 11. $7 + 7 = \underline{14}$ 12. $7 + 2 = \underline{9}$

13. $10 + 5 = \underline{15}$ 14. $4 + 1 = \underline{5}$ 15. $8 + 2 = \underline{10}$ 16. $6 + 7 = \underline{13}$

Spooky Subtraction

Answer key

Grades K-2

The crossed-out ghosts flew away. How many are left? Then solve the problems.

Name _____

Date _____

Part A: How many ghosts are left?

 $4 - 3 = \underline{1}$

 $5 - 2 = \underline{3}$

 $5 - 1 = \underline{4}$


 $8 - 2 = \underline{6}$

Part B: Subtract

1. $7 - 2 = \underline{5}$ 2. $14 - 4 = \underline{10}$ 3. $19 - 2 = \underline{17}$ 4. $17 - 1 = \underline{16}$

5. $9 - 6 = \underline{3}$ 6. $12 - 9 = \underline{3}$ 7. $7 - 3 = \underline{4}$ 8. $15 - 9 = \underline{6}$

9. $9 - 4 = \underline{5}$ 10. $13 - 8 = \underline{5}$ 11. $16 - 11 = \underline{5}$ 12. $14 - 3 = \underline{11}$

13. $14 - 10 = \underline{4}$ 14. $15 - 1 = \underline{14}$ 15. $19 - 7 = \underline{12}$ 16. $17 - 3 = \underline{14}$

Bat Comparisons

Answer key

Grades K-2

Write $<$, $>$ or $=$ between the numbers. Then fill in the missing numbers.

Name _____

Date _____

Part A: Compare the numbers

1. $3 < 16$

2. $2 < 3$

3. $45 < 50$

4. $23 = 23$

5. $6 > 0$

6. $46 > 42$

7. $4 < 18$

8. $12 < 23$

9. $17 = 17$

10. $15 < 46$

11. $33 > 22$

12. $42 < 49$

Part B: Skip count

Count by 2s: 4 6 8 10 12 14 16 18

Count by 5s: 10 15 20 25 30 35 40 45

Count by 10s: 30 40 50 60 70 80 90 100

Monster Multiplication

Answer key

Grades 3-5

Solve each multiplication fact. Try to finish all 40 in 5 minutes.

Name _____

Date _____

1. $2 \times 2 =$ 4 2. $8 \times 9 =$ 72 3. $6 \times 8 =$ 48 4. $11 \times 12 =$ 132

5. $10 \times 3 =$ 30 6. $9 \times 6 =$ 54 7. $11 \times 9 =$ 99 8. $11 \times 4 =$ 44

9. $7 \times 11 =$ 77 10. $6 \times 3 =$ 18 11. $5 \times 12 =$ 60 12. $7 \times 2 =$ 14

13. $10 \times 5 =$ 50 14. $7 \times 5 =$ 35 15. $11 \times 6 =$ 66 16. $8 \times 12 =$ 96

17. $5 \times 8 =$ 40 18. $3 \times 4 =$ 12 19. $10 \times 2 =$ 20 20. $11 \times 5 =$ 55

21. $8 \times 2 =$ 16 22. $12 \times 6 =$ 72 23. $5 \times 5 =$ 25 24. $6 \times 7 =$ 42

25. $7 \times 8 =$ 56 26. $5 \times 6 =$ 30 27. $8 \times 4 =$ 32 28. $12 \times 7 =$ 84

29. $3 \times 9 =$ 27 30. $9 \times 4 =$ 36 31. $9 \times 7 =$ 63 32. $4 \times 12 =$ 48

33. $2 \times 9 =$ 18 34. $11 \times 2 =$ 22 35. $11 \times 8 =$ 88 36. $10 \times 8 =$ 80

37. $10 \times 6 =$ 60 38. $3 \times 8 =$ 24 39. $3 \times 11 =$ 33 40. $6 \times 4 =$ 24

Trick-or-Treat Division

Answer key

Grades 3-5

Read each problem. Divide, then write the remainder.

Name _____

Date _____

1. Lily has 33 pieces of candy to share equally among 7 trick-or-treaters. How many does each get, and how many are left over?
Each gets 4 Left over 5
2. Sofia has 78 glow sticks to share equally among 9 friends. How many does each get, and how many are left over?
Each gets 8 Left over 6
3. Aarav has 46 mini pumpkins to share equally among 8 tables. How many does each get, and how many are left over?
Each gets 5 Left over 6
4. Leo has 63 stickers to share equally among 6 classmates. How many does each get, and how many are left over?
Each gets 10 Left over 3
5. Emma has 52 caramel apples to share equally among 8 trays. How many does each get, and how many are left over?
Each gets 6 Left over 4
6. Maya has 22 spider rings to share equally among 4 party bags. How many does each get, and how many are left over?
Each gets 5 Left over 2
7. Zara has 25 chocolate bars to share equally among 6 cousins. How many does each get, and how many are left over?
Each gets 4 Left over 1
8. Noah has 91 candy corns to share equally among 8 jars. How many does each get, and how many are left over?
Each gets 11 Left over 3

Pumpkin Pie Fractions

Answer key

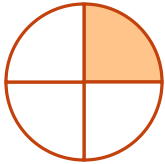
Grades 3-5

Write the fraction of each pie that is shaded. Then find the fraction of each group.

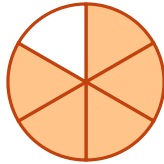
Name _____

Date _____

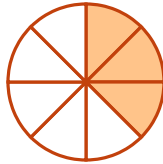
Part A: What fraction is shaded?



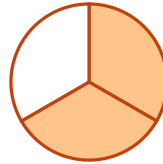
1/4



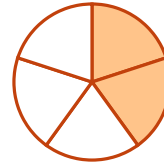
5/6



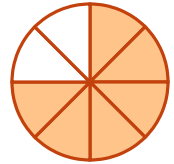
3/8



2/3



2/5



6/8

Part B: Fraction of a group

1. Aarav says $\frac{1}{3}$ of her 24 candies are lollipops. How many is that?
Answer: 8
2. Zara says $\frac{3}{4}$ of his 28 candies are chocolate. How many is that?
Answer: 21
3. Omar says $\frac{2}{5}$ of the 35 pumpkins on the farm are white. How many is that?
Answer: 14
4. Nora says $\frac{5}{6}$ of their 42 decorations are bats. How many is that?
Answer: 35
5. Arjun says $\frac{3}{8}$ of the 48 cupcakes have orange frosting. How many is that?
Answer: 18
6. Maya says $\frac{2}{3}$ of the 27 costumes in the shop are capes. How many is that?
Answer: 18

Haunted House Riddle

Answer key

Grades 3-5

Solve each problem, find the answer in the code box and write its letter.
Then spell out the answer to the riddle.

Name _____

Date _____

What room does a ghost always stay out of?

1,305 = I 1,572 = L 1,574 = G 2,015 = F 2,839 = V 3,370 = R 3,639 = A
3,669 = O 4,154 = N 4,393 = M 4,811 = H 5,175 = E 5,533 = D 8,281 = T
8,458 = B 9,128 = C

1. $5,081 + 3,200 = \underline{8,281}$ T

2. $5,304 - 493 = \underline{4,811}$ H

3. $5,666 - 491 = \underline{5,175}$ E

4. $4,285 - 2,713 = \underline{1,572}$ L

5. $595 + 710 = \underline{1,305}$ I

6. $6,116 - 3,277 = \underline{2,839}$ V

7. $968 + 337 = \underline{1,305}$ I

8. $2,104 + 2,050 = \underline{4,154}$ N

9. $1,032 + 542 = \underline{1,574}$ G

10. $6,066 - 2,696 = \underline{3,370}$ R

11. $3,362 + 307 = \underline{3,669}$ O

12. $1,176 + 2,493 = \underline{3,669}$ O

13. $927 + 3,466 = \underline{4,393}$ M

T H E L I V I N G R O O M
1 2 3 4 5 6 7 8 9 10 11 12 13

Graveyard Integers

Answer key

Grades 6-8

Add, subtract, multiply and divide. Watch the signs.

Name _____

Date _____

Part A: Compute

1. $-15 - 4 =$ **-19**
2. $-1 - 8 =$ **-9**
3. $(-9) \times (-7) =$ **63**
4. $7 \times (-1) =$ **-7**
5. $-44 \div 11 =$ **-4**
6. $12 + (-11) =$ **1**
7. $-15 + (-10) =$ **-25**
8. $(-5) \times (-5) =$ **25**
9. $(-13) \times 3 =$ **-39**
10. $(-3) \times 9 =$ **-27**
11. $-7 + 1 =$ **-6**
12. $-81 \div (-9) =$ **9**
13. $-14 + 5 =$ **-9**
14. $24 \div (-8) =$ **-3**
15. $-2 - 3 =$ **-5**
16. $-8 - 8 =$ **-16**
17. $24 \div (-4) =$ **-6**
18. $-8 - 6 =$ **-14**
19. $5 \div (-5) =$ **-1**
20. $4 + (-6) =$ **-2**

Part B: Word problems

21. At 9 PM the graveyard was 4°F . By 3 AM the temperature had dropped 9 degrees. What was the temperature at 3 AM?
Answer: **-5°F**
22. By sunrise, the temperature from problem 21 rose 4 degrees. What was the temperature at sunrise?
Answer: **-1°F**
23. A bat roosts 13 feet below the cave entrance, at -13 feet. It flies up 9 feet. Where is it now?
Answer: **-4 ft**
24. A haunted elevator starts on floor 6, goes down 9 floors, then up 4 floors. Which floor is it on?
Answer: **1**

Costume Shop Sale

Answer key

Grades 6-8

Use percents to work out each price. Show your work in the space.

Name _____

Date _____

1. A witch costume costs \$36.00. It is 25% off. What is the sale price?

Answer: \$27.00

2. A vampire cape was \$48.00 and is now \$30.00. What percent is the discount?

Answer: 37.5%

3. Face paint costs \$22.50 before an 8% sales tax. What is the total?

Answer: \$24.30

4. A mask costs \$40.00. The shop takes 20% off, then an extra 10% off the new price. What do you pay?

Answer: \$28.80

5. Is the deal in problem 4 the same as 30% off? Explain in one sentence.

Answer: 28% off in total, not 30%

6. A bag of candy cost \$4.00 last year and \$5.00 this year. What is the percent increase?

Answer: 25%

7. A pumpkin patch sold 360 pumpkins. 15% were white. How many white pumpkins were sold?

Answer: 54

8. 27 of the 36 students in a class wore costumes. What percent is that?

Answer: 75%

Equation Escape Room

Answer key

Grades 6-8

Solve each equation for x. Find x in the code box and write its letter. The letters answer the riddle.

Name _____

Date _____

What is a vampire's favorite fruit?

-8 = C -6 = I -5 = R 1 = E 2 = T 3 = D 4 = F 7 = B 8 = A 9 = N 10 = H 11 = K

1. $-2x + 9 = 0x - 7$ $x =$ 8 A

2. $-3x + 9 = -18$ $x =$ 9 N

3. $6x + 1 = 8x - 1$ $x =$ 1 E

4. $2x + 12 = -4$ $x =$ -8 C

5. $4(x + 5) = 28$ $x =$ 2 T

6. $-2(x + 11) = -38$ $x =$ 8 A

7. $-2(x + 4) = 2$ $x =$ -5 R

8. $x/3 + 9 = 7$ $x =$ -6 I

9. $3x - 12 = 15$ $x =$ 9 N

10. $-2x + 11 = 0x + 9$ $x =$ 1 E

A N E C T A R I N E
1 2 3 4 5 6 7 8 9 10

Mystery Picture Plot

Answer key

Grades 6-8

Plot each point on the grid and connect them in order with straight lines.

Name _____

Date _____

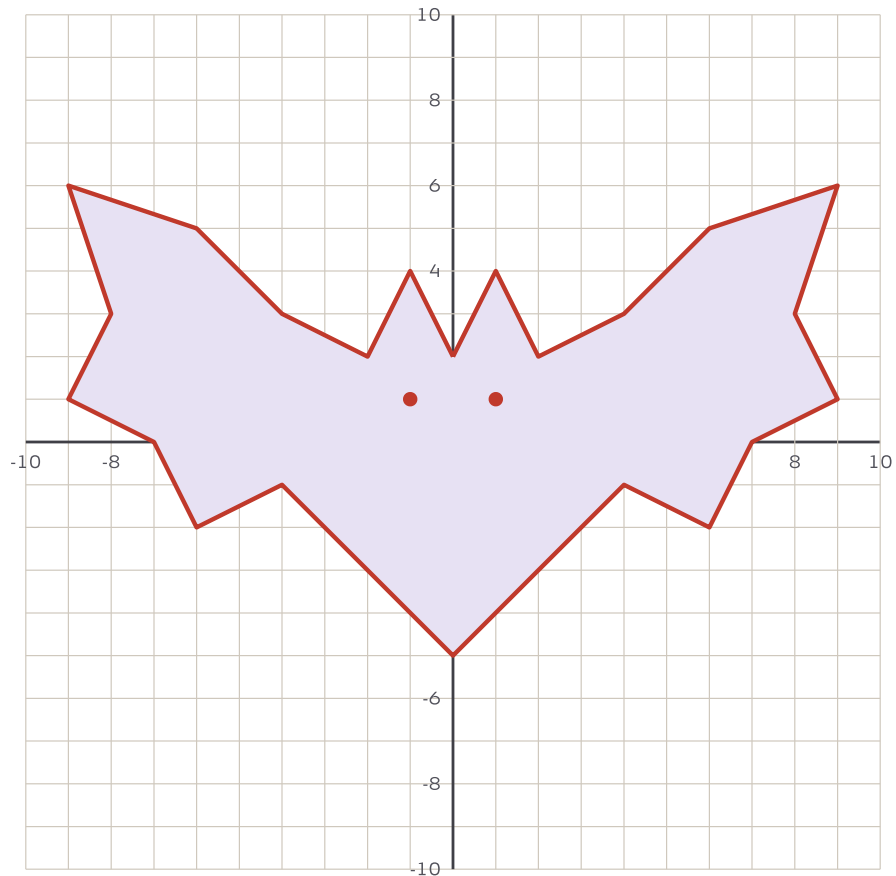
Connect these points in order:

(0, 2)	(1, 4)
(2, 2)	(4, 3)
(6, 5)	(9, 6)
(8, 3)	(9, 1)
(7, 0)	(6, -2)
(4, -1)	(2, -3)
(0, -5)	(-2, -3)
(-4, -1)	(-6, -2)
(-7, 0)	(-9, 1)
(-8, 3)	(-9, 6)
(-6, 5)	(-4, 3)
(-2, 2)	(-1, 4)
(0, 2)	

Then plot two dots for the eyes: $(-1, 1)$ and $(1, 1)$

What did you draw?

A bat



Quadrant check

Pick one point from the list for each quadrant.

Quadrant I: (2, 2)

Quadrant II: (-2, 2)

Quadrant III: (-4, -1)

Quadrant IV: (4, -1)

Any point from the list in the right quadrant is correct. Points on an axis, like $(0, 2)$, are not in any quadrant.

Haunted House Systems

Answer key

High School

Write a system of two equations for each problem, then solve it.

Name _____

Date _____

1. A haunted house sold 180 tickets for \$1,864. Adult tickets cost \$12 and child tickets cost \$8. How many of each were sold?

Answer: 106 adult, 74 child

2. Three chocolate bars and two lollipops cost \$24. One chocolate bar and four lollipops cost \$18. Find the price of each (whole dollars).

Answer: bar \$6, lollipop \$3

3. A witch mixes a 10% potion with a 40% potion to make 6 liters of a 20% potion. How many liters of each did she use?

Answer: 4 L of 10%, 2 L of 40%

4. A ghost ship sails 24 miles downstream in 3 hours and 6 miles back upstream in 3 hours. Find the speed of the ship in still water and the speed of the current.

Answer: ship 5 mph, current 3 mph

5. Solve the system: $2x + 3y = -1$ and $x - y = -8$.

Answer: $x = -5, y = 3$

6. Solve the system: $5x - 2y = 22$ and $3x + 4y = 8$.

Answer: $x = 4, y = -1$

Pumpkin Launch

Answer key

High School

A catapult launches pumpkins. Height h is in feet and time t is in seconds.
Round to 2 decimal places where needed.

Name _____

Date _____

	Height model	Time to top	Maximum height	Time to land
Launch A	$h(t) = -16t^2 + 64t + 6$	<u>2 s</u>	<u>70 ft</u>	<u>4.09 s</u>
Launch B	$h(t) = -16t^2 + 80t + 4$	<u>2.5 s</u>	<u>104 ft</u>	<u>5.05 s</u>
Launch C	$h(t) = -16t^2 + 96t + 10$	<u>3 s</u>	<u>154 ft</u>	<u>6.10 s</u>

Hint: the top of the arc is at $t = -b/(2a)$. The pumpkin lands when $h(t) = 0$.

Work space

4. Which launch stays in the air longest? How much longer than Launch A?

Answer: Launch C, 2.01 s longer

5. For Launch A, when is the pumpkin exactly 54 feet high? Give both times.

Answer: $t = 1$ s and $t = 3$ s

Candy Bag Probability

Answer key

High School

Give each answer as a fraction in lowest terms unless the question asks for a count.

Name _____

Date _____

A trick-or-treat bag holds 6 chocolate bars, 4 lollipops, 5 gummy worms, 3 caramels. That is 18 candies in all. You pull candies without looking.

1. What is the probability of pulling a chocolate bar?

Answer: 1/3

2. What is the probability of not pulling a gummy worm?

Answer: 13/18

3. You pull one candy, eat it, then pull another. What is the probability both are chocolate bars?

Answer: 5/51

4. You pull a candy, put it back, and pull again. What is the probability of a lollipop and then a caramel?

Answer: 1/27

5. If you pull a candy and put it back 90 times, about how many lollipops would you expect?

Answer: 20

6. A spinner pays 3 candies on $1/4$ of spins, 1 candy on $1/2$ of spins and 0 candies otherwise. What is the expected number of candies per spin?

Answer: 5/4

Zombie Outbreak

Answer key

High School

A zombie outbreak starts with 5 zombies, and the number doubles every 3 hours: $N(t) = 5 \cdot 2^{(t/3)}$, where t is in hours.

Name _____

Date _____

Part A: Complete the table

Hours	$t = 0$	$t = 3$	$t = 6$	$t = 12$	$t = 18$
Zombies	<u>5</u>	<u>10</u>	<u>20</u>	<u>80</u>	<u>320</u>

Part B: Solve

2. After how many hours are there exactly 1,280 zombies?

Answer: 24 hours

3. After how many hours are there 1,000 zombies? Round to one decimal place.

Answer: 22.9 hours

4. A second town grows linearly: $L(t) = 5 + 40t$. Which town has more zombies at $t = 12$? At $t = 24$?

Answer: linear at 12 (485 vs 80), exponential at 24 (1280 vs 965)

5. A cure potion starts at 80% strength and loses half its strength every 5 days. What is its strength after 15 days?

Answer: 10%

6. When does the potion first drop to 5% strength?

Answer: 20 days