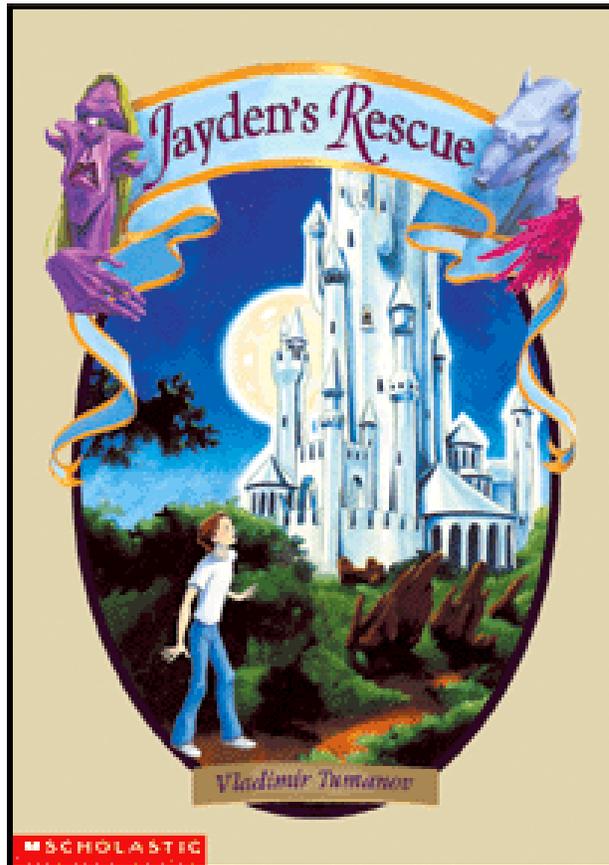


# Jayden's Rescue

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Illustrated by David Bordeleau  
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# Chapter 1 - The Find

## Characters:

- Alex Isaac Fog loves reading, especially fantasy; finds math difficult
- his best friend, Sam, loves reading nonfiction

## Plot developments:

- Alex finds a magical pencil (silver, covered with blue numbers, and a castle at the eraser-end), while hears footsteps, but no one is around
- on their Monday math test, the pencil solves the problems!

## Page 4

### Problem:

An ant is sitting at one end of a long twig. Suddenly, it notices a friend at the other end and decides to go for a visit. The ant begins to move at a speed of 2 centimetres per second. It takes the ant 7 seconds to reach the friend. How long is the twig?

### Solution:

If it takes the ant 7 seconds to go from one end of the twig to the other, that time has to be multiplied by the distance per second (2 centimetres)

$$7 \times 2 = 14.$$

The twig is 14 centimetres long.

## Page 6

### Problem:

A truck sets out from town A at a speed of 45 kilometres per hour toward town B. Another truck sets out from town B for town A at a speed of 54 kilometres per hour. They meet 20 minutes later. What is the distance between towns A and B?

### Solution:

20 minutes goes into 60 minutes 3 times, so 20 minutes is a  $\frac{1}{3}$  of an hour. To find out how far the first truck goes in 20 minutes, find out  $\frac{1}{3}$  of 45 kilometres per hour.  $45 \div 3 = 15$  kilometres. The first truck has covered 15 kilometers of the way from town A to town B in 20 minutes. The same is done for the second truck.  $54 \div 3 = 18$ . In 20 minutes, the second truck has gone 18 kilometres. So when the first truck is 15 kilometres away from town A on the way to town B, and the second truck is 18 kilometres away from town B on the way to town A, they meet. Add up the two distances:  $15+18 = 33$ . The towns are 33 kilometres apart.

## Chapter 2 - The Threesome

### Plot development:

- Alex shares the pencil with Sam and another friend, Vanessa
- tells them about footsteps he heard when he found the pencil
- all take turns letting the pencil solve math problems
- pencil keeps getting shorter
- Alex lies and tells them he lost it (important for him to keep his math marks up so he could go to Camp Waconda)
- pencil actually disappears from his locker
- finds a book called, "Jayden's Rescue" on his shelf

## Chapter 3 - Jayden's Rescue

### Plot development:

- Alex begins to read the story of Jayden, a princess, and her younger sister
- they create a wonderful world called Idyllia, in which education and culture are greatly valued
- Jayden is stolen by the evil king Rechner of Lugubria
- to escape, she must go through 400 rooms, each guarded by a monster with a mathematical problem

Page 24

### Problem:

I am the father of nine sons, all one eyed-monster boys.  
I keep an eye on all my lads, as they play with their toys.  
A three-eyed monster once dropped in and brought his sons along.  
Three bulging eyes were on each guest; oh, what a blinking throng!  
Together all the monsters had exactly forty eyes.  
How many three-eyed kids were there? The numbers tell no lies.

### Solution:

There are 40 eyes in all. To find out how many eyes belong to the guest, the eyes of the one-eyed host family must be subtracted from 40. There is 1 one-eyed father and 9 one-eyed sons, which make 10 eyes. So,  $40 - 10 = 30$ .  
The guest have 30 eyes altogether. If each one has 3 eyes, 30 must be divided by 3. That makes 10 guests. One of them is the three-eyed father. So,  $10 - 1 = 9$ .  
There are 9 three-eyed kids.

(note: Alex could not turn the page of the book until he solved the problem)

## Chapter 4 - Jayden's Helpers

### Plot development:

- Alex realizes he must solve that first problem before the book page can be turned
- recruits Vanessa's help

### Page 30

#### Problem:

I eat berries soft and juicy - they're my favourite chow.  
Keep in mind: five hundred kilos is my weight right now.  
I've just finished having supper. What a berry feast!  
But I think I overdid it - I'm a greedy beast.  
Right before the meal I was a slimmer, lighter bear:  
Just four hundred fifty kilos. This is true I swear!  
Each delicious berry weighs ten grams - no more, no less.  
Count the berries I have eaten. Be precise; don't guess.

#### Solution:

The beast weighed 450 kilograms before supper and 500 kg afterwards. So,  $500 - 450 = 50$ . He must have eaten 50 kg of berries.

But, berries' weight is given in grams.

There are 1000 grams in a kilogram. So in 50 kilograms there are  $50 \times 1000 = 50\,000$  grams. So he actually ate 50 000 g of berries.

Each berry weights 10 grams. So,  $50\,000 \div 10 = 5\,000$ .

The beast ate 5 000 berries.

Problem:

My heads have lots of hair to comb;  
it's hard to find the time.  
So when I comb a head of hair,  
my parents pay a dime.  
Each head is combed in sequence,  
always one, two, three, four, five.  
My mom says order is a goal  
for which good monsters strive.  
I'm proud to say that now I've earned  
twelve dollars fair and square.  
How often, tell me, have I combed  
each shaggy head of hair?

Solution:

If he earned 12 dollars, that is the same as 120 dimes, because there are ten dimes in one dollar, and  $10 \times 12 = 120$ .

The monster has 5 heads.

So,  $120 \div 5 = 24$ .

Each head has been combed 24 times.

## Chapter 5 - The Message

### Plot development:

- at the end of Chapter 4, Alex and Vanessa get a message from King Rechner that he knew they were helping Jayden
- decide to get Sam to help as well

Page 37

### Problem:

Your heart is brave. Your mind is strong.  
And Jayden's in your debt.  
The quest to free her must go on  
despite King Rechner's threat.  
If she has covered fifty rooms and has so many more,  
How many will she cross each day  
before the final door?  
A daily quota must be met, as steady as the clock.  
Five weeks is all that Jayden has  
to break the castle lock.

(signed Monoculus)

*Discussion of prefixes used in math would be helpful and interesting to students*

### Solution:

There are 400 rooms in Rechner's dungeon. 50 rooms have been crossed, so 350 remain. We have 5 weeks to cross them. There are 7 days in a week. So,  $5 \times 7$  is 35. We have 35 days to cross the remaining rooms.  $350 \div 35 = 10$ . The daily quota would be 10 rooms per day.

Problem:

King Rechner once a castle built. He used his magic powers  
And on the castle's mighty walls he put twelve silver towers.  
Each one is taller than the last, each one beyond compare.  
A lofty problem's built for you, so solve it, if you dare.  
The smallest tower's twenty metres; tower two, five more.  
The third one's height is thirty-five, and then comes tower four.  
It is a huge one: fifty-five. So tell me, if you please:  
What is the height of number twelve? The answer is a breeze.

Solution:

Tower 1: 20 metres

Tower 2: 25       (25 - 20 = 5)

Tower 3: 35       (35 - 25 = 10)

Tower 4: 55       (55 - 35 = 20)

Tower 5: so  $20 \times 2$  is 40; add 40 to Tower 4's height ( $40 + 55 = 95$ )

Tower 6:  $40 \times 2 = 80$ ; so  $80 + 95 = 175$

Tower 7:  $80 \times 2 = 160$ ; so  $160 + 175 = 335$

Tower 8:  $160 \times 2 = 320$ ; so,  $320 + 335 = 655$

Tower 9:  $320 \times 2 = 640$ ; so,  $640 + 655 = 1295$

Tower 10:  $640 \times 2 = 1280$ ; so,  $1280 + 1295 = 2575$

Tower 11:  $1280 \times 2 = 2560$ ; so,  $2560 + 2575 = 5135$

Tower 12:  $2560 \times 2 = 5120$ ; so,  $5120 + 5135 = 10\ 255$

The twelfth tower is 10 255 metres tall.

## Chapter 6 - The Paper Path

Page 46

### Problem:

I've many brothers, young and old. We're all ten years apart.  
I'm in the middle of the bunch. Let's see if you are smart.  
The youngest brother's age is ten: the only age I'll tell.  
The rest is tricky, I'm afraid, so listen very well.  
With all our ages added up, we've lived twelve hundred years.  
How old am I? Please tell me now, and dry up all your tears.

### Solution:

All the brothers are ten years apart, and the youngest is 10 years old.

Brother	Age	Total of ages
1	10	30
2	20	
3	30	60
4	40	100
5	50	150
6	60	210
7	70	280
8	80	360
9	90	450
10	100	550
11	110	660
12	120	780
13	130	910
14	140	1050
15	150	1200
16	160	
17	170	

Doing a table, you can see that there are fifteen ages that will add up to 1200 years. This means fifteen brothers (14 + one guard).

The guard said he is in the middle.

That means 7 on one side, 7 on the other side. So he must be the eighth brother.

The guard, who is the eighth brother, must be 80 years old.

Problem:

Exponentia is a planet  
where the swarming burbles play  
Multiplying is what burbles do  
with pleasure every day.  
If two burbles get together  
they begin to multiply  
No one can keep up with burbles,  
and I don't advise you try.  
In just four steps, without  
the use of any magic tricks,  
Two becomes sixty-five thousand  
and five hundred thirty-six.  
Luckily for Exponentia,  
there are burble-hunting Zites.  
Thanks to them the burble numbers  
never reach such dizzy heights.  
Otherwise the planet's surface  
would be quickly overrun.  
In a giant sea of burbles,  
you would never have much fun!  
Tell me how the burbles do it.  
What's the pattern to their sport?  
Here's a hint for your solution:  
it's a fairly squarish sort.

Hint from the one-eyed monster on page 51:

Ragged Danny was a fisher;  
he was poor, his boat was old.  
All his life he dreamed of riches;  
every day he thought of gold.  
He had heard that if a mermaid  
every landed in a net,  
She would pay a handsome ransom  
and depart with no regret.

In his boat, one frosty morning,

Danny sat, alone and glum.  
Deep in thought, he watched the water,  
keeping warm with sailor's rum.  
Suddenly, he felt a tugging,  
and his net began to dance.  
Up he pulled. His heart was jumping.  
Maybe this was Danny's chance!

First he glimpsed a tail, all scaly.  
Was it just another fish?  
But a second later Danny knew  
- hurray! - he had his wish.  
In the boat there was a mermaid.  
She was angry as can be.  
Danny said to her, "I've got you.  
Give me gold, and you'll swim free."

"I will grant your wish, good fisher,"  
said the mermaid with a smile.  
"Three gold coins is what I give you:  
these should make it worth your while.  
If you want more money, Danny,  
all you have to say is 'Square!'  
Pretty soon you won't be fishing -  
you will be a millionaire."

Danny took the coins and freed her.  
He was feeling mighty fine.  
As he dove into the water,  
"Square!" he cried - the coins were nine.  
Nine gold coins would buy him plenty,  
and the fun had just begun.  
"Square!" he shouted and was holding  
nine times nine...Gulp! Eighty-one!  
Eighty-one is quite a number,  
but it had to be outdone.  
"Square!" he said and saw six thousand  
and five hundred sixty-one.

What he failed to notice, sadly,

was the water in the boat.  
Danny's barque was barely holding.  
Would it sink or stay afloat?

Greedy Danny was too eager  
to keep going on and on.  
"Square!" he gasped and in a second  
he, his boat and gold were gone.  
Now, you see why mermaid-fishing  
may be nasty for one's health?  
(Do you know the heavy number  
that sank all of Danny's wealth?)

Solution to the hint:

Every time the word "square" was used, each number was multiplied by itself.

$$3 \times 3 = 9$$

$$9 \times 9 = 81$$

$$81 \times 81 = 6\,561$$

If you continue the pattern,  $6\,561 \times 6\,561 = 43\,046\,721$

Solution to problem on page 49:

$$2 \times 2 \text{ burbles} = 4$$

$$4 \times 4 = 16$$

$$16 \times 16 = 256$$

$$256 \times 256 = 65\,536$$

By squaring the number of burbles at each step, there were 65 536 burbles in just 4 steps.

## Chapter 7 - Surprise

### Plot development:

- Jayden entered the next room where an eight-legged unicorn awaited her
- kids continue to solve problems, 10 a day, occasionally with the help of the one-eyed monster
  - teacher explains squares and exponents on page 57
  - kids continue to solve puzzles, until reach the 400th one on the day before the last day of school
  - last door had no monster guarding it, so no puzzle to solve
  - however, notice dial of numbers 1-60 over the doorknob of the locked door
  - one-eyed monster returns to help Jayden

Page 59

### Hint from one-eyed monster:

Old Rechner is the meanest king that I have ever seen.  
I've learned he's played a trick on you, so you would be his queen.  
He put no monster at this door, and you will find no key.  
But such a tyrant I won't serve. I want to set you free.

King Rechner has a secret chest that's full of wondrous things:  
A cloak that helps him move unseen, and wands, and magic rings.  
But of them all, he treasures most a pencil made for math.  
Its job is clearing all that blocks a problem-solver's path.

Black magic needs astrology. You can't get very far  
Unless you deftly calculate the movements of each star.  
Whenever Rechner casts a spell that's meant to hurt or maim,  
The pencil figures faultlessly and sharpens Rechner's aim.

Before he brought you here to us, King Rechner went away.  
He often prowls through far-off lands, but where, I cannot say.  
On his return, the castle rang with Rechner's angry cries,  
For on his travels he had dropped his number-crunching prize.

A few weeks later he was gone again, but not for long.  
"I've got it back! It's mine once more!" was Rechner's merry song.  
And with that pencil he designed a trial you're doomed to fail,  
So that, despairing, you will wed the king to leave his jail.

Rechner's chest is known to none - but I'm a clever spy  
And nothing ever hides from me and my all-seeing eye.  
So when I heard King Rechner boast that he had tricked his "guest,"  
I was resolved to help you leave, and broke into his chest.

So many puzzles you have solved. One more is left to do.  
Monoculus has done his job. The rest is up to you.

Plot development (cont.)

- realize that the magic pencil was Rechner's
- realize that the one-eyed monster is Monoculus
- look at the back cover and see a little door, with tiny hinges and a little silver knob (like the one with the dial)

Page 62

Problem:

To open me you need to know two numbers X and Y,  
There is a third one: 42. Now let me clarify:  
When X and Y are added up they're half of 42,  
and Y is twice as big as X. I'll say no more to you.

Solution:

$$(X + Y) \times 2 = 42$$

$$42 \div 2 = 21$$

$$X + Y = 21$$

$$\text{But } X \times 2 = Y$$

$$\text{If you substitute, } X + (X \times 2) = 21$$

Try "Guess and Check" method:

try 5 >>>>	$5 + (5 \times 2) = 15$
	doesn't work
try 6 >>>>>	$6 + (6 \times 2) = 18$
	doesn't work
try 7 >>>>>>	$7 + (7 \times 2) = 21$
	works

That means  $X = 7$ . Y is twice X so  $Y = 14$ .

Plot development (cont.):

- when the magic pencil gets stuck in the pencil sharpener, kids have to finish the solution themselves
- kids use 7, 14 and 42 as the combination to the lock
- try other combinations (only 6)  
14-42-7 worked
- lights went out then on, the door was open, and the room was empty, so Jayden was free, but she had disappeared

## Chapter 8 - Camp Waconda

### Plot development:

- kids go off to Camp Waconda
- meet camp director, Jeff
- Sam enjoyed sailing, Alex and Vanessa like the water-skiing
- when Alex almost drowns water-skiing and it is discovered that the new rope had been cut, kids spot Rechner's face in the lake water
- Rechner threatens them (in verse) to return Jayden within 7 days, or he will take the 3 of them

## Chapter 9 - The Way Out

### Plot development:

- kids find Monoculus has left them a message of help ( in verse, of course) that they must find a secret word that will lock Rechner away
- must solve seven puzzles and add the answers
- kids decide that the only way they would be able to work on the puzzles would be to sail out to Blackwell Island (scary stories about the cave there) after lights-out

Page 82-83

### Problem:

Five hungry fish swam out one day  
to see what they could eat;  
They thought they'd catch a shrimp or too:  
that would have been a treat.  
Arranged in sequence by their weight,  
each one weighed thrice as much  
as the one before it in the line -  
such order in the clutch!  
The peckish second-smallest fish  
decided not to wait  
And swallowed up the smallest one  
as if it were some bait.  
The middle fish was keen to feed,  
and in voracious haste  
It feasted on the second one  
which had a tangy taste.  
The second-biggest was no fool and did not waste its time.  
The middle fish was gobbled up;  
its flavour was sublime.  
The party had to end because  
the biggest feaster came  
And ate the second-biggest one  
without the slightest shame.  
That glutton's weight in kilograms is what I want from you  
If just before the meal he weighed  
one hundred sixty-two.

### Solution:

If the biggest fish weighs 162 kilograms, and is three times bigger than the one below, then 162 must be divisible by 3. So,  $162 \div 3 = 54$ . That means the second biggest fish weighed 54 kilograms. The next largest fish must weigh  $(54 \div 2 = 18)$  18 kilograms. The next largest fish would weigh  $18 \div 3$  which is 6 kilograms. The next would be  $6 \div 3 = 2$  kilograms. That must be the smallest fish.

Adding up all the fish>>>>  $2 + 6 + 18 + 54 + 162 = 242$ .

The biggest fish weighed 242 kilograms after the meal.

### Plot development (cont.)

- when they hear rustling they are fearful it is Rechner, but it is only a deer
- next problem is solved two different ways, successfully (shows students that you can reach the answer different ways; not wrong, as long as you can explain your thinking)

### Page 86-87

#### Problem:

At midnight sharp two goblin friends  
will start a goblin dance

Under the moon, among the trees,  
the goblins love to prance!

At five past twelve, these goblins leave,  
so four can take their place.

At ten past twelve, four must depart,  
while eight waltz in with grace.

At quarter past, six dancers flee,  
and sixteen join the ball;

Five-minute shifts mark every switch.

They heed a magic call.

This will go on till one o'clock.

So tell me if you might:

at one AM how many will

be there to say good night?

Solution:

In an hour, there are 60 minutes. In 60 minutes, there are  $(60 \div 5 = 12)$  12 five-minute segments. 

Also need to keep track of the number of goblins leaving and arriving each time. 

Time	Goblins Leaving	Goblins Arriving	Number of goblins present
12:05	2	4	2
12:10	4	8	$(2 + 4) 6$
12:15	6	16	$(6 + 10) 16$
12:20	8	32	$(16 + 24) 40$
12:25	10	64	$(40 + 54) 94$
12:30	12	128	$(94 + 116) 210$
12:35	14	256	$(242 + 210) 452$
12:40	16	512	$(496 + 452) 948$
12:45	18	1 024	$(1 006 + 948) 1 954$
12:50	20	2 048	$(2 028 + 1 954) 3 982$
12:55	22	4 096	$(4 074 + 3 982) 8 056$
1:00	24	8 192	$(8 168 + 8 056) 16 224$

 At one o'clock, there were 16 224 goblins to say "good night".

Plot development (cont.)

- after solving the problem, they return to the boat but find it had drifted 20 m off shore

## Chapter 10 - Reversal of Fortune

### Plot development:

- kids were tired all day as they did their camp activities, but they still went out that night to Blackwell Island to solve the next puzzle

Page 93-94

### Problem:

A stock of oatmeal cookies filled Megan's pantry shelves.  
At midnight cookie raiders snuck in and helped themselves.  
The cookies were so crunchy! The thieves adored their taste.  
A fifth of all the cookies were swallowed in great haste.  
The ones uneaten numbered one hundred thirty-two.  
Who could have done this evil? Meg did not have a clue.  
She called a nice policeman who saw she was distressed;  
He asked how many cookies the victim once possessed.  
But Meg could not remember, and so we ask of you;  
Please help her with the answer, or Meg will cry, boo-hoo!

### Solution:

Meg has an unknown total of cookies before the raid and loses  $\frac{1}{5}$  (one-fifth), leaving her with 132 cookies. Need to find out how much one-fifth would be. If the total number of cookies was broken up into 5 equal parts (fifths), then if one fifth goes missing, there are four fifths left. But we know that  $\frac{4}{5}$  (four-fifths) equal 132 cookies. So if 4 parts equals 132, then one part must equal  $(132 \div 4)$  33.  $\frac{4}{5} + \frac{1}{5} = \text{total}$ , so  $132 + 33 = 165$ .  
Meg had 165 cookies before the raid.

Problem:

Three happy worms loved apples most and ate them from inside.

They had a way of getting in despite the pesticide.

The smallest one could eat, per day, ten grams of apple pulp.

The middle one would skip a day, and thirty grams could gulp.

The biggest one would wait two days; then fifty grams were gone.

And so it went, from dawn to dusk and then from dusk to dawn.

Eight apples, eighty grams apiece, were hanging on their tree.

How long, I wonder, did they last, among those wiggly three?

(And I must add that on day one each worm began to chew,

For they were hungry and did not have better things to do.)

Solution:

If you make a chart, you can keep track of how much is being eaten daily.

If at the end, 8 apples of 80 grams each were eaten, that means  $8 \times 80 = 640$  grams in total were eaten.

Day	Smallest worm	Middle worm	Biggest worm	Total eaten at end of day
Day 1	10 grams	30 grams	50 grams	90
Day 2	10 grams			100
Day 3	10 grams	30 grams		140
Day 4	10 grams		50 grams	200
Day 5	10 grams	30 grams		240
Day 6	10 grams			250
Day 7	10 grams	30 grams	50 grams	340
Day 8	10 grams			350
Day 9	10 grams	30 grams		390
Day 10	10 grams		50 grams	450
Day 11	10 grams	30 grams		490
Day 12	10 grams			500
Day 13	10 grams	30 grams	50 grams	590
Day 14	10 grams			600

Day	Smallest worm	Middle worm	Biggest worm	Total eaten at end of day
Day 15	10 grams	30 grams		640
Day 16	10 grams		50 grams	

It took the three worms 15 days to eat those 8 apples.

Plot development (cont.)

- when they next meet at night, Vanessa and Sam are caught by the night patrol
- now Alex's responsibility to solve the last puzzles alone

# Chapter 11 - The Last Stretch

## Plot development:

- Alex goes to the island alone, to solve the last problems

Page 101-102

## Problem:

A jolly, juicy jumping bug was sauntering along  
A praying mantis lunged at him and wished to do him wrong.  
The bug fled fast. He huffed and puffed. His speed was hard to beat.  
one hundred centimetres flat per second - what a feat!  
The hunter's speed was not a joke; impressive was his gait.  
Per minute thirty metres is a very daunting rate.  
Pray, do not keep me in suspense and tell me, I implore,  
If at the end the mantis was as hungry as before.  
In centimetres, if you please, per second, I might add,  
What was the difference in their speeds? Good hunting to you, lad.

## Solution:

First, the two measurements are in different units: 100 cm per sec, and 30 m per min. So have to change them to be in the same units, if you want to compare them.

The bug runs at 100 cm per second.

The praying mantis runs at 30 m per minute.

There are 100 cm in one metre.

That means that the praying mantis's speed is  $30 \times 100 = 3000$  cm per minute.

Now, have to change the time units.

There are 60 seconds in one minute.

That means that the praying mantis's speed is  $3000 \div 60 = 50$  cm per second.

The difference in their speeds is  $100 - 50 = 50$  cm per second.

## Plot development (cont.)

- when it starts to rain, Alex hides in the cave

Problem:

I have a little sister. Her age is eighty-four.  
 I recently turned ninety, a fact that I deplore!  
 When we were so much younger, I was three times her age.  
 How old was I? Go figure, and be like me, a sage.

Solution:

The sister's age when they were younger is X.  
 Monoculus's age when they were younger is Y.  
 $3 \times X = Y$   
 Also, Monoculus was 6 years older than his sister.  
 $X + 6 = Y$   
 That means, if  $3 \times X = Y$ , and  $X + 6 = Y$ , then  $3 \times X = X + 6$

If you try the "guess-and-check" method of problem-solving,

When his sister's age (X) is...	Monoculus's age (Y) is...	Check
1	(1 + 6) 7	but $1 \times 3 \neq 7$
2	(2 + 6) 8	but $2 \times 3 \neq 8$
3	(3 + 6) 9	$3 \times 3 = 9$

When Monoculus was 9, he was three times his sister's age.

Problem:

Three hundred seats in equal rows  
will fill a roomy hall.

A film of wonder will be shown  
to children, big and small.

Two hundred forty children come  
which leaves some empty rows.

How many rows are left untouched?

Please ponder and disclose.

Half of the seats per vacant row,  
if multiplied by four,  
would equal all the empty seats.

That's all. Oh, one thing more:  
the screen is where your troubles end.

So watch and don't despair.

When you have seen the mist, my friends,  
you'll know that you are there.

Solution:

If there are 300 seats in total, and only 240 students come, then there are  $300 - 240 = 60$  seats unoccupied.

The rows are all equal. The number of seats per row is  $X$ . So  $X \div 2$  is half a row. That number multiplied by four equals 60 (all the empty seats).

$$\text{So, } (X \div 2) \times 4 = 60$$

Something times 4 equaled 60.

So that means 60 divided by 4 equals that same number.

$$60 \div 4 = X \div 2$$

$$60 \div 4 = 15,$$

$$\text{so } 15 = X \div 2$$

$$\text{This means that } 15 \times 2 = X \quad \text{so } X = 30$$

Each row has 30 seats.

But, question asks how many empty rows there are.

$$60 \text{ empty seats} \div 30 \text{ seats per row} = 2 \text{ rows}$$

There were two empty rows in the hall.

### Plot development (cont.)

- Alex had solved the last puzzles; now had to solve the riddle by adding up all the results from the puzzles

Fish:	242
Goblins:	16 226
Cookies:	165
Days:	15
Centimetres/sec:	50
Age:	9
Rows:	2
Total:	16 709

- Alex can't figure out how the number 16 709 will get him a password
- returns to camp but the 3 kids get called before the director for going out at night
- Vanessa suggests the digits could be code for letters of the alphabet  
e.g., 1 = A, 2 = B
- so, 16 709 would represent AFG(blank)I
- if make the blank or zero an "O", get AFGOI

## Chapter 12 - The Magic Word

### Plot development:

- day before Rechner is to return, the campers watch a movie called, "The Endless Sea" in their auditorium
- Alex realizes their auditorium is the "roomy hall" from one of the puzzles (there were two empty rows!)
- hope the movie will give them some clues
- the movie is about 3 fisherman who get caught in fog, drifting for days, until a school of dolphins guides the boat to shore
- no clues evident to the kids
- decide that they need to wait for Rechner to appear, say AFGOI to his face, and he'd be locked away forever
- when Rechner's face appears from below, Alex says AFGOI but nothing happens
- the water begins to rise and take on Rechner's shape, with arms reaching out
- Sam suggests that they try another letter combination (i.e., anagrams)
- try IOFGA, GAFIO - nothing
- Rechner continues to rush towards them
- Vanessa realizes that the clue mentioned "mist" which is a synonym for "fog", Alex's last name!
- Alex Isaac Fog = AIFOG
- they shout AIFOG at Rechner, at which he shrinks back to the surface of the lake, turning into a whirlpool, and a shadow zooming straight up out of it, gets sucked into the book through the door in the back cover
- then the door on the back cover disappears

### **Epilogue**

- kids didn't speak of it again
- but - on the first day of school, while on the bus, they see a beautiful red-haired woman in an emerald green dress, who waves at them and then turned the corner!!
- could it be...?

## Math Curriculum Strands and Concepts covered by each math problem in "Jayden's Rescue":

Page Number	Math Strand (concepts) covered
4	Measurement (metric units for length/distance)
6	Measurement (metric units for rate)
24	Number Sense and Numeration (operations)
30	Measurement (metric units for mass, conversion between units)
33	Measurement (money)
37	Number Sense and Numeration (operations)
43	Patterning and Algebra (patterns); Measurement (metric units for length)
46-7	Patterning and Algebra (patterns); Number Sense and Numeration (addition); Data Management and Probability (organizing data)
49	Patterning and Algebra (patterns); Number Sense and Numeration (exponents)
62	Patterning and Algebra (finding the unknown); Number Sense and Numeration (BEDMAS; guess-and-check problem solving strategy)
82-83	Patterning and Algebra (patterns)
86-87	Patterning and Algebra (patterns); Measurement (time)
93-94	Number Sense and Numeration (fractions)
95-96	Data Management and Probability (organizing data into tables); Patterning and Algebra; Measurement (metric units for mass)
101-102	Measurement (metric units for length/distance and rate, conversion between units, )
104	Patterning and Algebra (finding unknown)
106	Patterning and Algebra (finding unknown)