

Customizing Mathematical Assessment for Learning Outcomes



jbeach.weebly.com

Customizing Mathematical

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Assessment for Learning Outcomes



“Algebra class will be important to you later in life because there’s going to be a test six weeks from now.”

Teaching mathematics at the senior high level can be a challenge if you wish to reveal to each student the specific learning outcomes in which they are struggling.

I JUST DON'T
TEST WELL.



Learning Focus

Aspenview

Aspenview

Math 10C Blk4

John Smith

Category: All
Term: 6
Focus Range: 0% to 69%

Learning Objective

Determine the least common multiple of two numbers

Factor using common factors

Multiply $(ax + b)^2$

Simplify $a + bx(x + c)$

Learning Focus

Aspenview

Aspenview

Math 10C Blk4

Sarah Jones

Category: All
Term: 6
Focus Range: 0% to 69%

Learning Objective


All standards above focus range.

Assessment needs to be connected to the learning outcomes.

If I do this test with one eye closed, one hand tied behind my back and hopping on one foot, do I get an A for Effort?



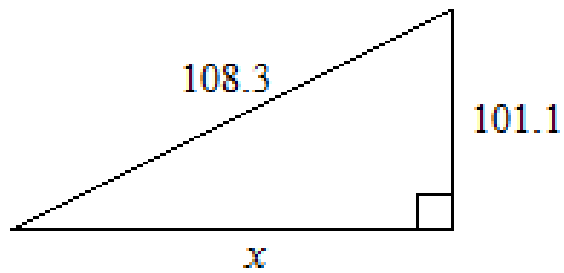
File Edit View Insert Format Table Help


 Times New Roman 11 **B** *I* U

Question

Determine the missing side.

(not drawn to scale)



- | | |
|--------------------------------|--|
| <input type="radio"/> A. 36.6 | <input type="radio"/> C. 41.4 |
| <input type="radio"/> B. 148.2 | <input checked="" type="radio"/> D. 38.8 |

Rationale

$$\text{since } x^2 = 108.3^2 - 101.1^2$$

$$x = \sqrt{1507.68}$$

$$x = 38.8$$

Question Info

Difficulty:

Reference:

Learning Objective: Uses Pythagorus theorem to solve for a side

National Standard:

State Standard:

Local Standard:

Topic:

Keywords:

Miscellaneous:








Notes:

Class Performance Summary

Math 10C BI4

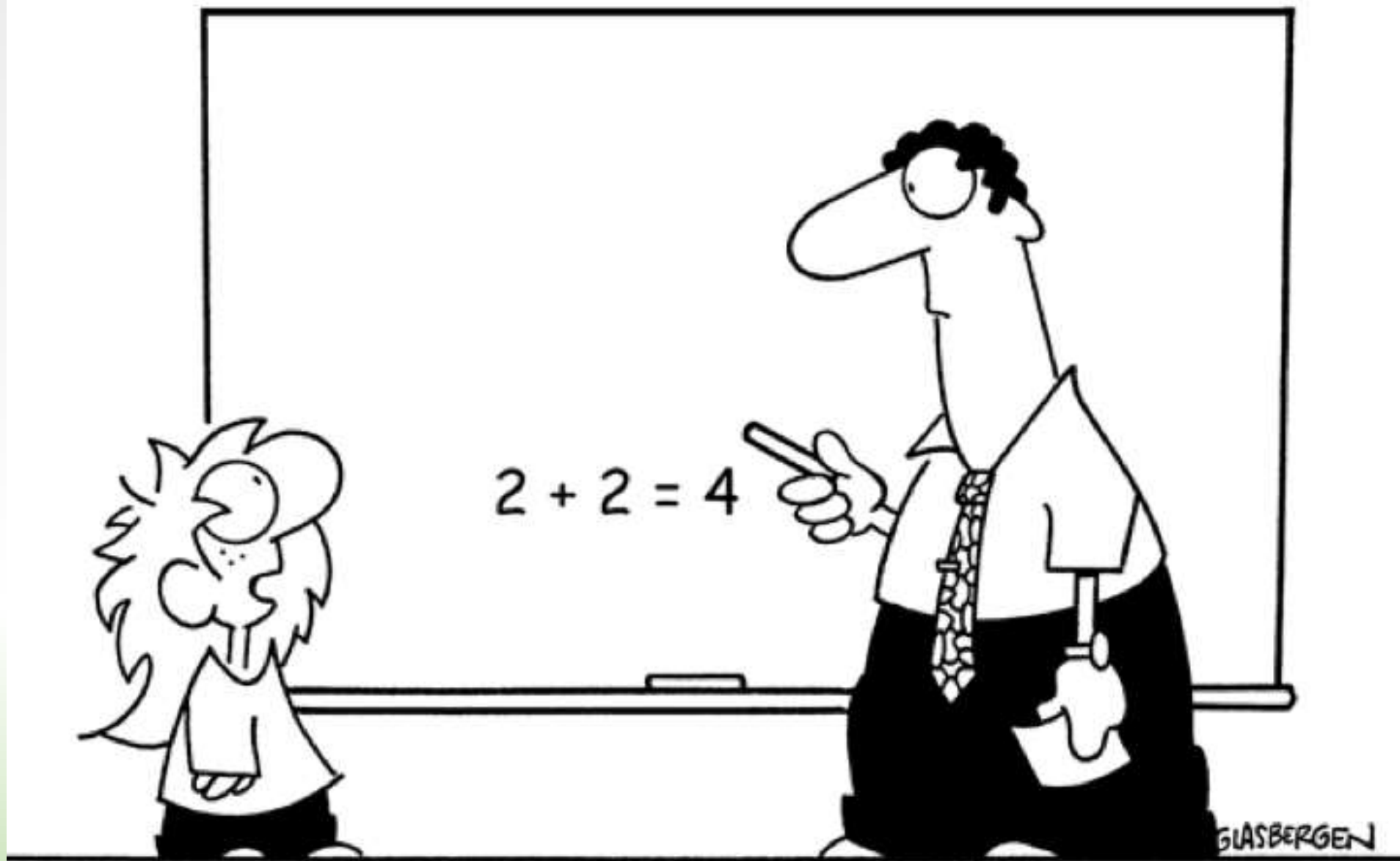
Total Students: 16

Category: All
Term: 6
Proficiency Target: at or above 70%

Learning Objective	# Items	0%	50%	100%	# Students Proficient	Class Average
Chooses an appropriate trig ratio	2				14	93.8%
Determines a missing angle using trigonometry	3				13	93.8%
Determines a missing side using trigonometry	3				13	91.7%
Identifies hypotenuse, opposite and adjacent sides	1				16	100%
Identifies Sine or Cosine or Tangent Ratios	3				11	89.6%
Solves basic word problems using trigonometry	3				10	65.6%
Solves Problems Involving More than One Right Triangle	4				12	81.3%

Using technology,
customized tasks can
be generated for
each student.





“How can I trust your information when you’re using such outdated technology?”

Worksheets

ID: A

Exponents Practice

1. $(-a^3)^9(2a)^5$

2. $(2d)^{-2} \cdot (2d)^5$

3. $\frac{x^7}{x^4}$

4. $7(x^9)^9(-4x^3)^5$

ID: B

Exponents Practice

1. $(4x^9)^4(-x^4)^5$

2. $(a^7)^4$

3. $(8x^9y)^3$

4. $\frac{(8b)^3}{(8b)^2}$

ID: C

Exponents Practice

1. $(c^3)^8$

2. $-4(x^4)^6(2x^6)^6$

3. $(-5a^9)^3(8a^2)^2$

4. $(2a)^2 \cdot (2a)^{-9}$

ID: D

Exponents Practice

1. $(-a^3)^3$

2. $(4x)^{-1} \cdot (4x)^{-5}$

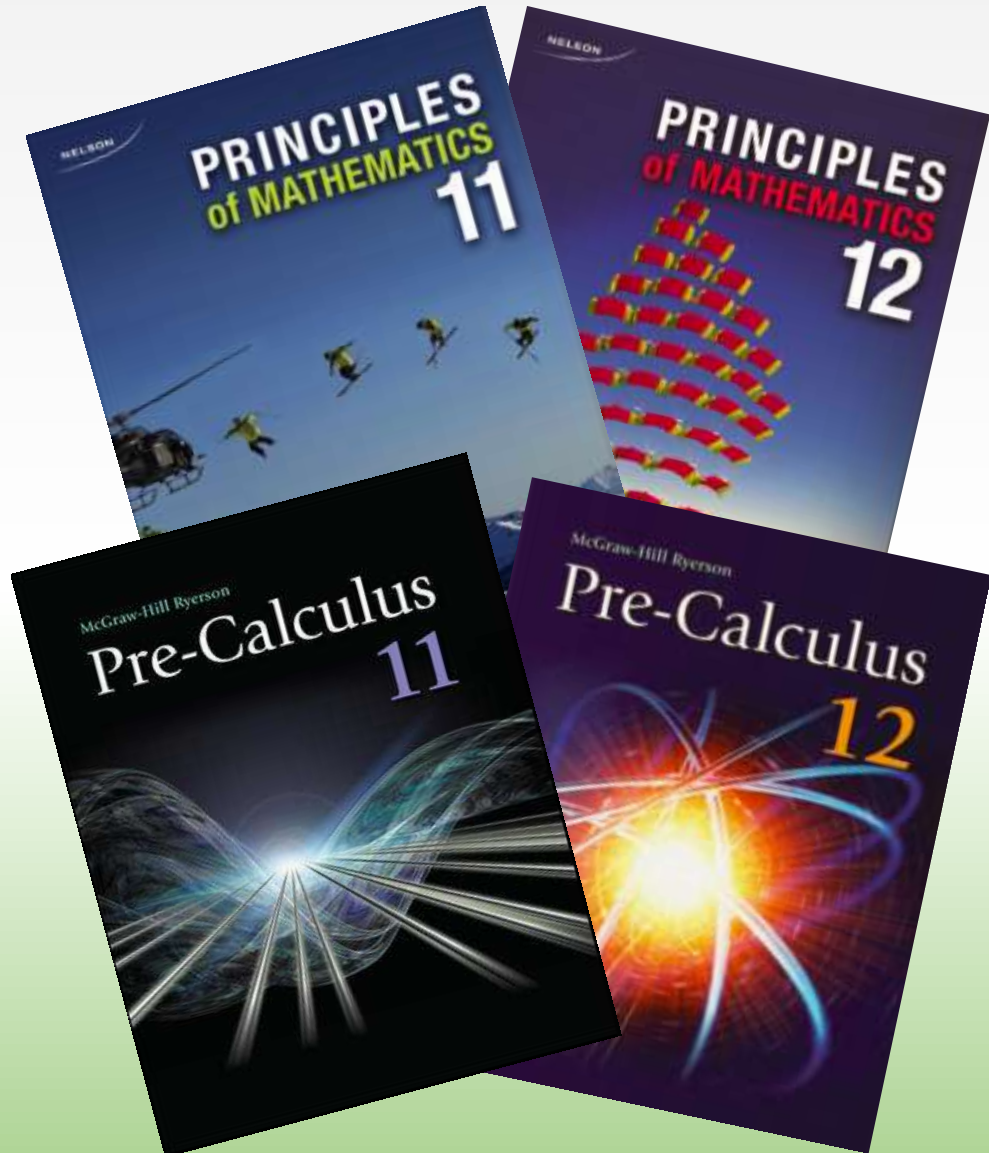
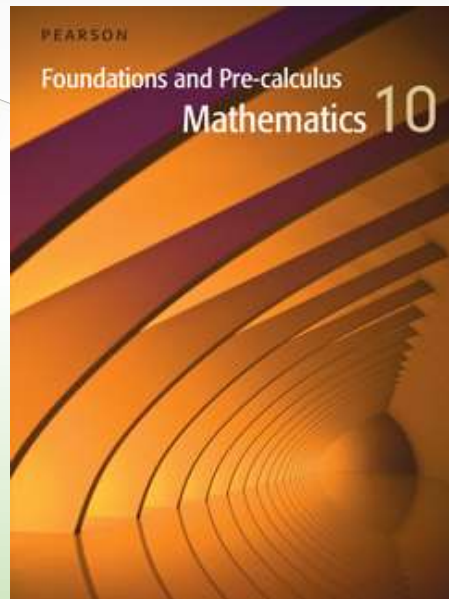
3. $\frac{b^8}{b^5}$

4. $7^{-5} \cdot 7$

Customized to
individual needs

ExamView[®] is an assessment based suite of software designed for teachers to customise questions in an exam-style format.

It is available as an option with all of the textbooks.



Grades 11-12



It is available as an option with many other textbooks.

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Nelson Biology 20-30

Student Text with CD

9780176289188 \$99.95

Teacher's Resource(Print/CD/Online)

9780176289201 \$318.45

Lab and Study Masters

9780176289249 \$271.95

Solutions Manual

9780176289232 \$271.95

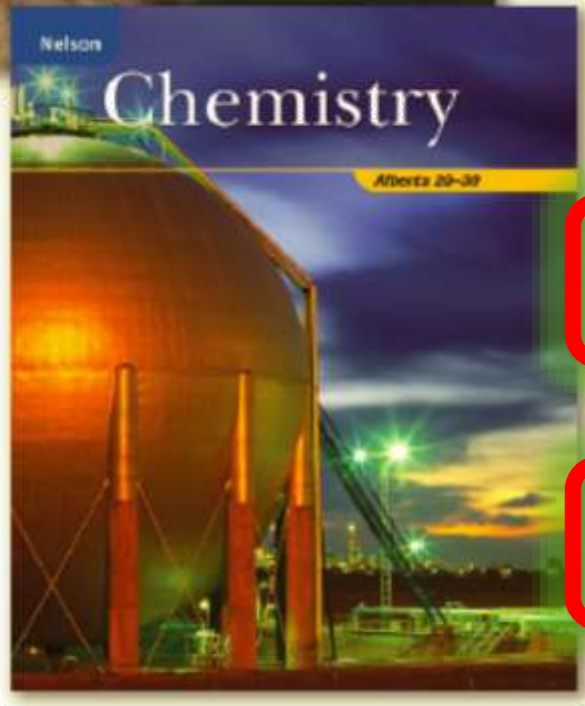
Computerized Assessment Bank (CD)

9780176289256 \$442.95

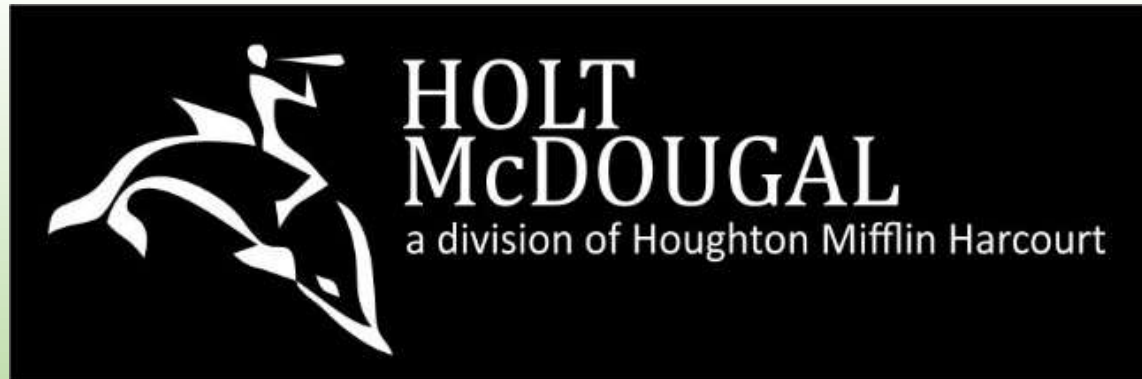
Nelson Chemistry 20-30

Computerized Assessment Bank (ExamView)

9780176289379 \$442.95



Many publishers
use Examview[®]
with their
textbooks.



eInstruction Corporation

Denton, TX 76201

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ExamView[®]

Assessment Suite



ExamView[®]

Assessment Suite

Test Generator



Test Player



Test Manager



Test Generator



- **Test Builder**

Create:

- tests for assessment,
- quizzes
- study guides and worksheets
- Extra Practice

Test Generator



- **Test Builder**

- print assessments
- Create assessments online
- Create assessments on School network

Test Generator



- Test Builder



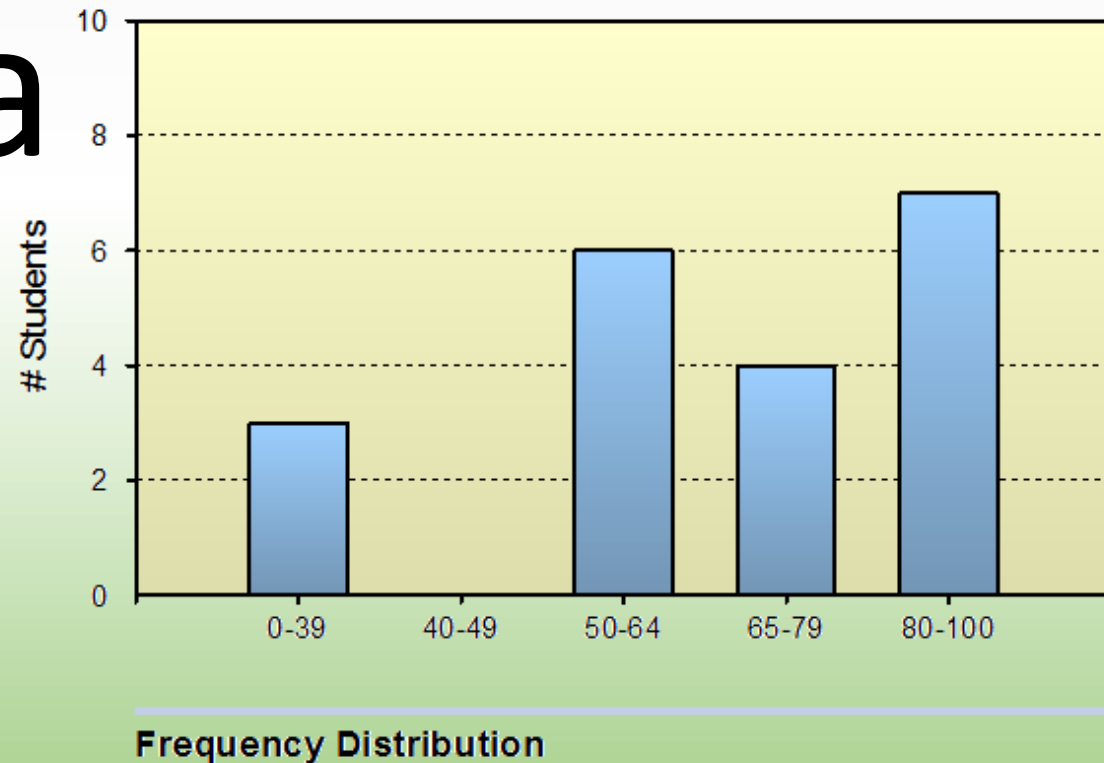
- Question Bank Editor

- purchase prepared question banks
- add your own questions






Test Manager



- used to collect results
- analyse data
- generate reports
- reports



Assignment: M20-1 Quad Fn Quiz
Category: Quiz
Term: 4
Date: 10/07/2014
Points: 10 (10 questions)

Question	Class Average	Correct Response	
<i>Multiple Choice</i>			
1	100%	B	(B: 100%)
2	90%	C	(A: 5%, C: 90% , D: 5%)
3	80%	D	(B: 10%, C: 10%, D: 80%)
 4	60%	C	(A: 20%, B: 15%, C: 60% , D: 5%)
5	90%	D	(A: 5%, C: 5%, D: 90%)
 6	35%	D	(A: 55%, C: 10%, D: 35%)
 7	35%	D	(A: 25%, B: 25%, C: 15%, D: 35%)
8	75%	C	(A: 20%, C: 75% , D: 5%)
 9	65%	D	(A: 15%, B: 20%, D: 65%)
 10	20%	A	(A: 20% , B: 30%, C: 35%, D: 15%)

Test Player



- enables use across the school network



- Choose to add your own questions, or select them from a prepared question bank



A Yes

B Yes

C Yes

D Yes

- Quickly create tests, quizzes, worksheets and exams
- Deliver assessments online or in print



- **Multiple question formats**
 - True/False + Modified True/False
 - Multiple Choice + Multiple Response
 - Bimodal (toggle between MC or Short Answer)
 - Yes/No
 - Numeric Response
 - Matching
 - Completion
 - Short Answer, Problem, Essay, Case and Other

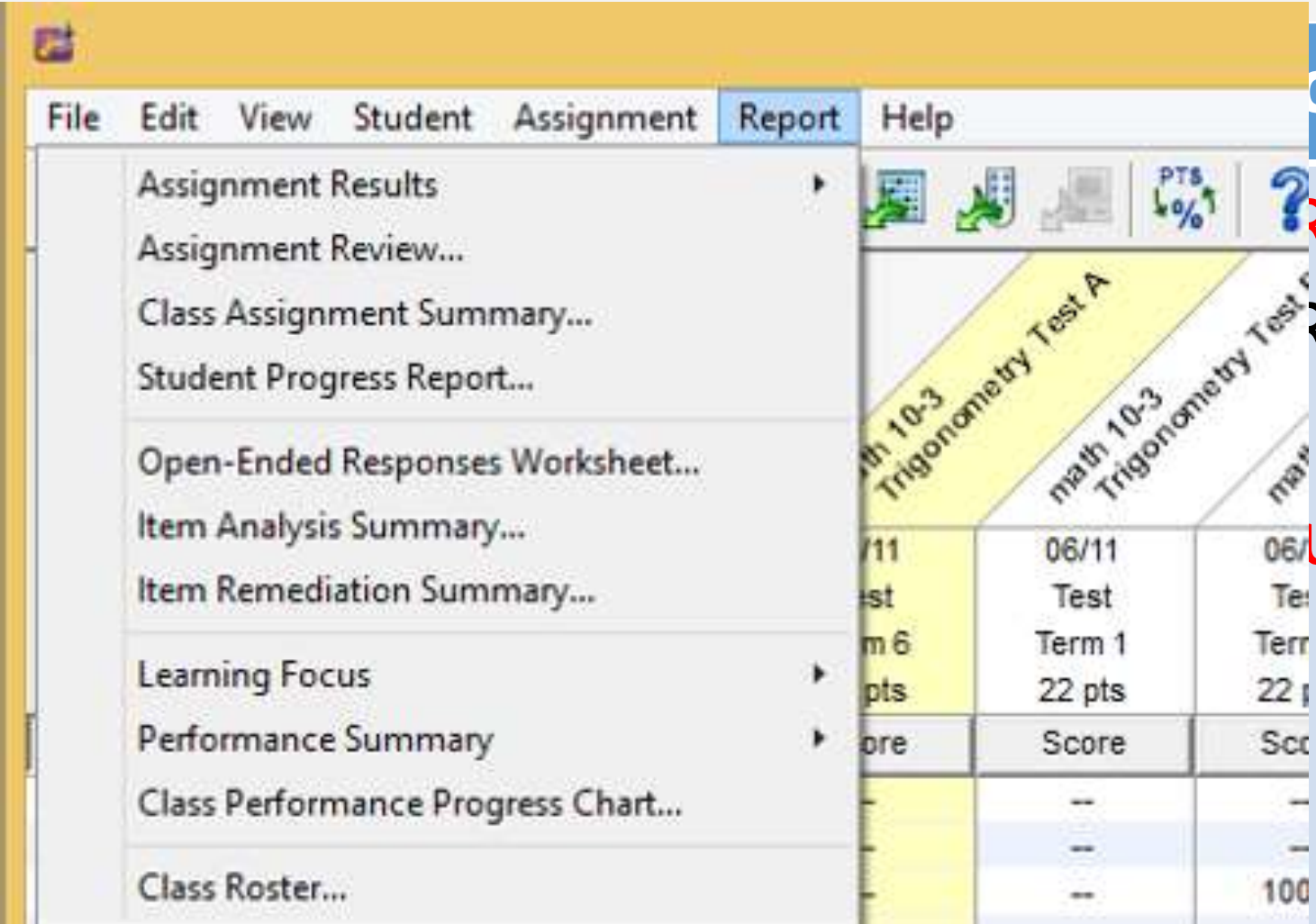
- Randomise the question order
- Randomise Multiple Choice

answers



- Generate reports

Class Report
Assignment
Assignment
Open-Ended
Item Analysis
Learning Focus
Performance
Class Performance
Class Roster



Report
Results
Review
Progress Report
Summary

- Automated scoring methods

Purchased sheets

ExamView[®] A-E Answer Card
Side A

NAME (PRINT) _____

TEST NAME _____ DATE / /

FEED DIRECTION ↑

I D N U M B E R	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9	9

Please use a #2 pencil. Fill in complete oval like this:

VERSION NUMBER 1 2 3 4

1	T	F				41	T	F			
	A	B	C	D	E		A	B	C	D	E
2	A	B	C	D	E	42	A	B	C	D	E

Form No. 258936

Key EK Verify EV Rescore ER

Select test code if applicable A B C D

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

Student ID Number

1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
51	A	B	C	D	E
52	A	B	C	D	E
53	A	B	C	D	E
54	A	B	C	D	E
55	A	B	C	D	E

Advantage
APPERSON EDUCATION PRODUCTS

Marking Instructions

USE NO. 2 PENCIL ONLY

- Example A B C D E
- Make **Dark and Complete** Marks
- Erase Completely** to Change
- Make No Stray Marks

- Automated scoring methods
OMR Scanners



- Automated scoring methods

Plain Paper scanning sheets

Most scanners with TWAIN drivers



(windows only...)

- Automated scoring methods

Print
Your
own

Print Bubble Form

Form Name:

- 100 Questions 1-4
- 100 Questions 1-5
- 100 Questions A-D, F-J
- 100 Questions A-E
- 100 Questions A-E, F-K
- 100 Questions TF
- 30 Questions TF Jr.
- 50 Questions 1-4
- 50 Questions 1-5
- 50 Questions A-D, F-J
- 50 Questions A-D, F-J Jr.
- 50 Questions A-E
- 50 Questions A-E Jr.
- 50 Questions A-E, F-K Jr.

Description:

100 multiple-choice questions with 4 choices for each response. Choices are numbered 1-4. Student ID numbers allow up to 10 digits.

Note: These forms are compatible with ExamView Assessment Suite plain-paper scanning.

Student Name: Jane Doe

Assignment: Polyn Quiz 1 vsD

Period: _____ Date: 10/14/2014

Marking Instructions

- Use a No. 2 pencil (do not use pen)
- Fill the circles in completely
- Erase completely to change your answer
- Make no stray marks

Example



Score

Student ID Number

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

A - E

1	A	B	C	D	E	11	A	B	C	D	E	21	A	B	C	D	E	31	A	B	C	D	E
2	A	B	C	D	E	12	A	B	C	D	E	22	A	B	C	D	E	32	A	B	C	D	E
3	A	B	C	D	E	13	A	B	C	D	E	23	A	B	C	D	E	33	A	B	C	D	E
4	A	B	C	D	E	14	A	B	C	D	E	24	A	B	C	D	E	34	A	B	C	D	E
5	A	B	C	D	E	15	A	B	C	D	E	25	A	B	C	D	E	35	A	B	C	D	E
6	A	B	C	D	E	16	A	B	C	D	E	26	A	B	C	D	E	36	A	B	C	D	E
7	A	B	C	D	E	17	A	B	C	D	E	27	A	B	C	D	E	37	A	B	C	D	E
8	A	B	C	D	E	18	A	B	C	D	E	28	A	B	C	D	E	38	A	B	C	D	E
9	A	B	C	D	E	19	A	B	C	D	E	29	A	B	C	D	E	39	A	B	C	D	E
10	A	B	C	D	E	20	A	B	C	D	E	30	A	B	C	D	E	40	A	B	C	D	E

Student Name: Jane Doe

Assignment: Polyn Quiz 1 vsD

Period: _____ Date: 10/14/2014

Marking Instructions

- Use a No. 2 pencil (do not use pen)
- Fill the circles in completely
- Erase completely to change your answer
- Make no stray marks

Example



Score

Student ID Number

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

A - D

1	A	B	C	D	11	A	B	C	D	21	A	B	C	D	31	A	B	C	D	41	A	B	C	D
2	A	B	C	D	12	A	B	C	D	22	A	B	C	D	32	A	B	C	D	42	A	B	C	D
3	A	B	C	D	13	A	B	C	D	23	A	B	C	D	33	A	B	C	D	43	A	B	C	D
4	A	B	C	D	14	A	B	C	D	24	A	B	C	D	34	A	B	C	D	44	A	B	C	D
5	A	B	C	D	15	A	B	C	D	25	A	B	C	D	35	A	B	C	D	45	A	B	C	D
6	A	B	C	D	16	A	B	C	D	26	A	B	C	D	36	A	B	C	D	46	A	B	C	D
7	A	B	C	D	17	A	B	C	D	27	A	B	C	D	37	A	B	C	D	47	A	B	C	D
8	A	B	C	D	18	A	B	C	D	28	A	B	C	D	38	A	B	C	D	48	A	B	C	D
9	A	B	C	D	19	A	B	C	D	29	A	B	C	D	39	A	B	C	D	49	A	B	C	D
10	A	B	C	D	20	A	B	C	D	30	A	B	C	D	40	A	B	C	D	50	A	B	C	D





	Math 30-1 Fns & Relations Quiz	Math 30-1 Fns & Relations Test	Math 30-1 Fns & Relations Quiz1
	02/09 Benchmark Term 1 13 pts	02/10 Benchmark Term 1 18 pts	02/10 Benchmark Term 1 13 pts
D	Score	Score	Score
38	5	--	--
22	9	--	--
60	7.5	--	--
61	7	--	--
42	9	--	--
77	5	--	--
97	5	--	--
24	6	--	--
20	8.5	--	--
83	--	--	--
40	10	--	--
49	7	--	--
50	8	--	--
	7.3	--	--

Assignment Edit Delete

My favourite features

- Learning outcomes for each question.

- Dynamic Questions



Static Question

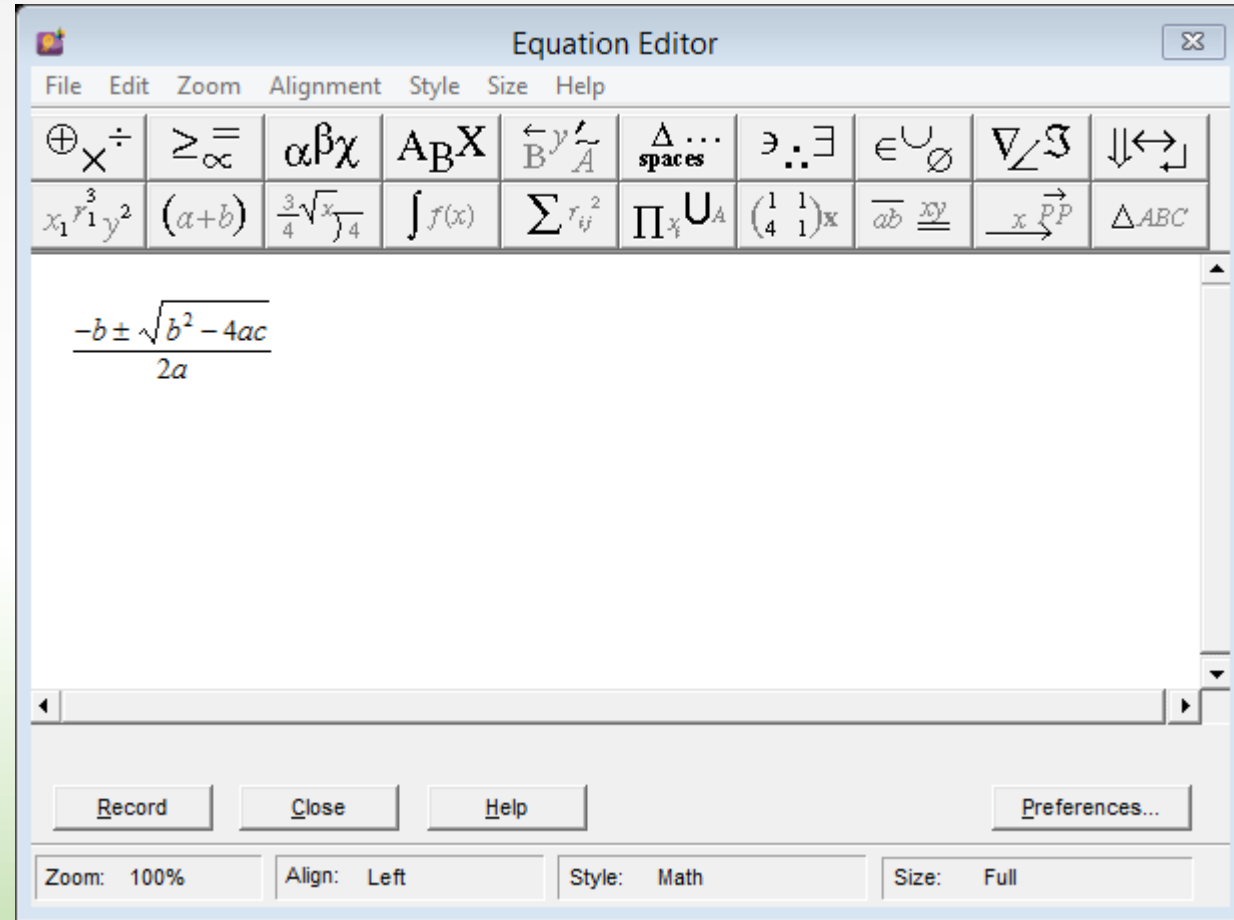


Dynamic Question

- Ability to create your own questions
- Scanning from plain paper

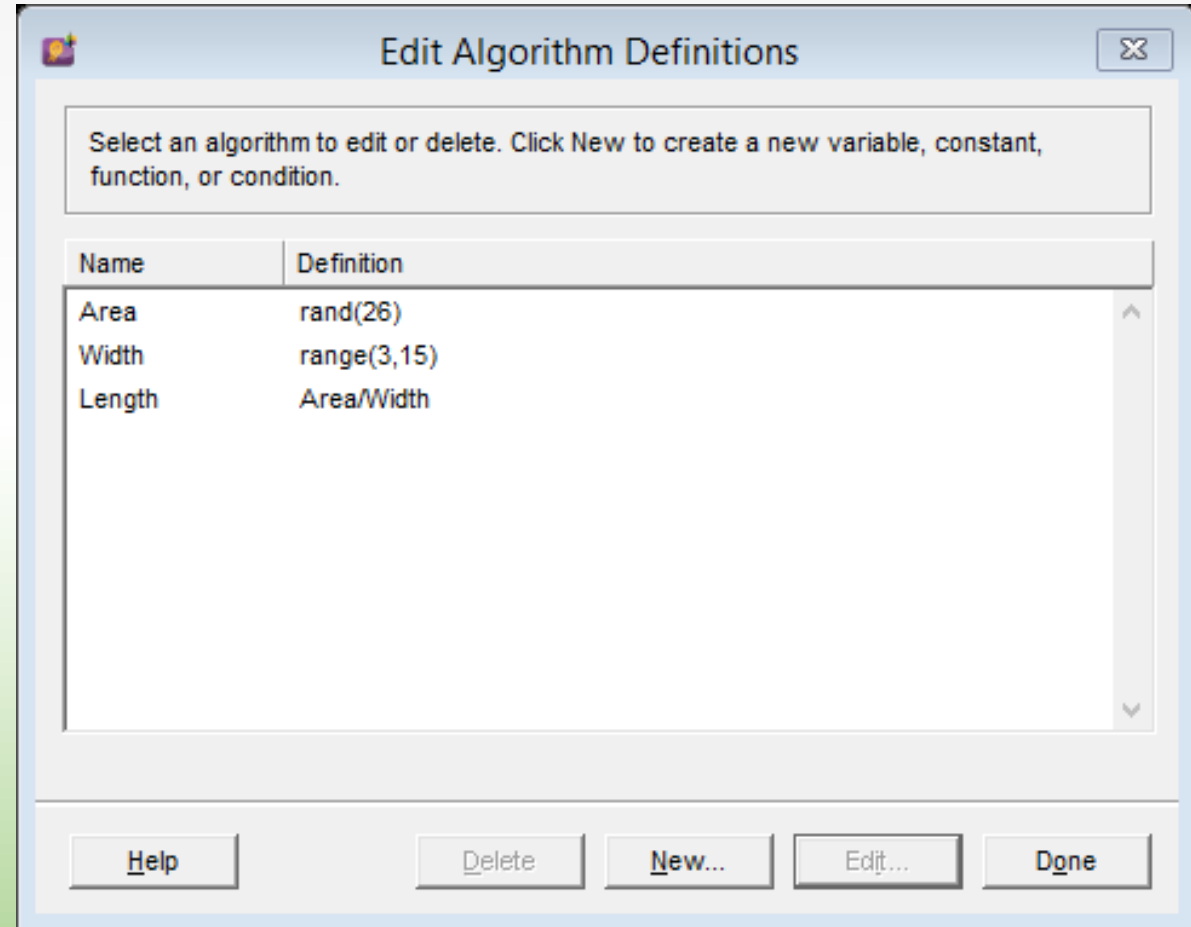
Creating Questions

- Equation Editor



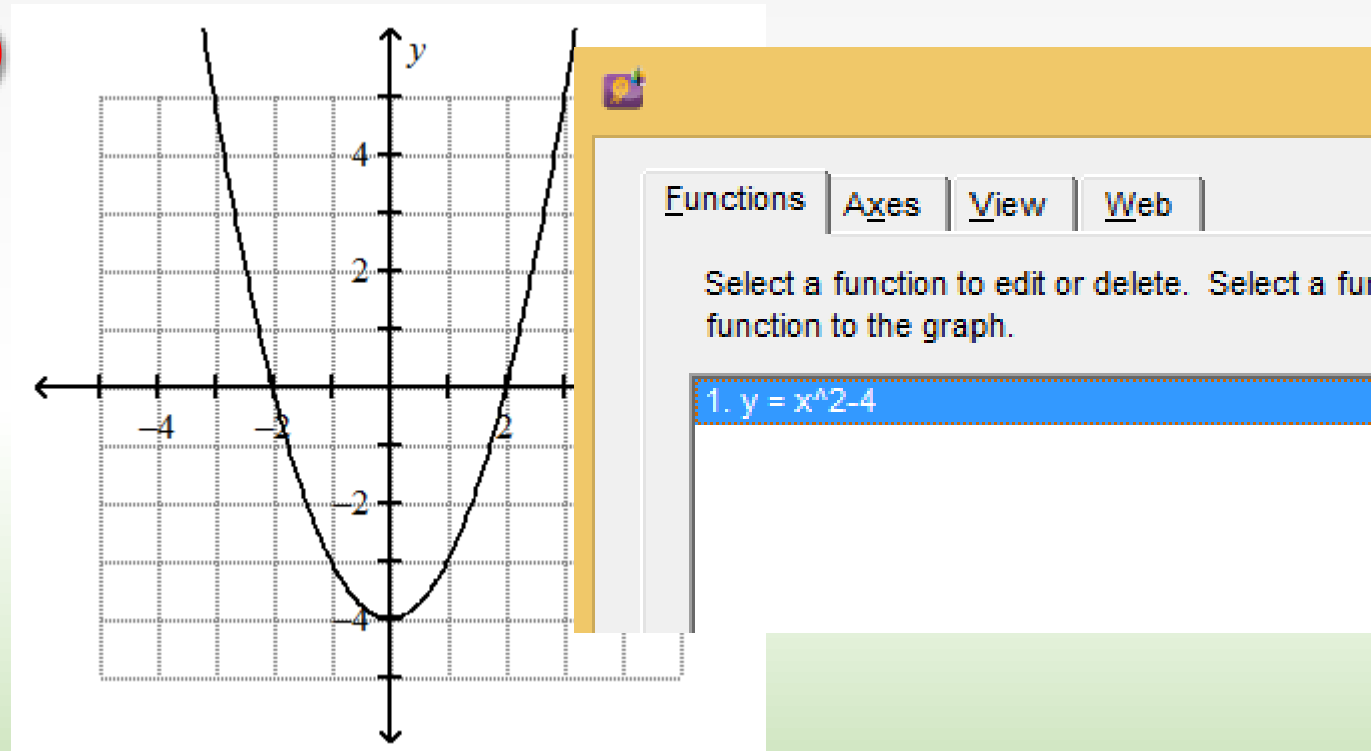
Creating Questions

- Equation Editor
- Variables



Creating Questions

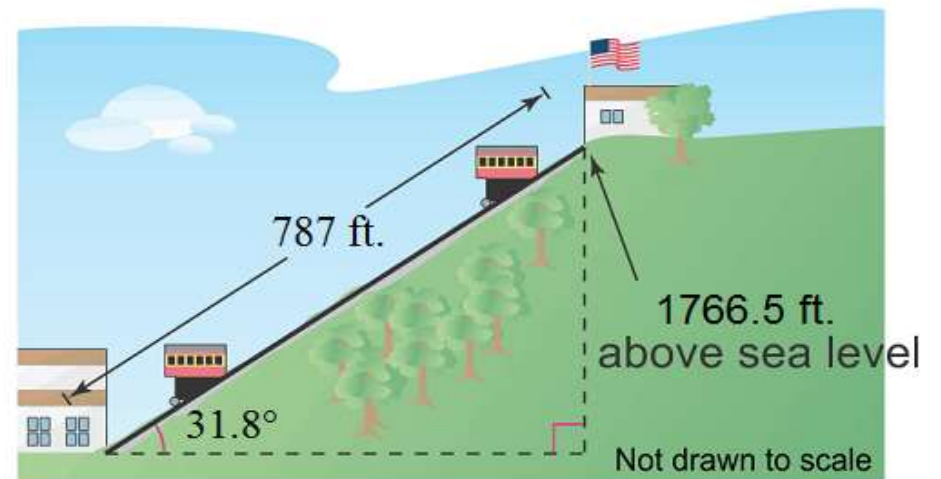
- Equation Editor
- Variables
- Graphs



Creating Questions

- Equation Editor
- Variables
- Graphs
- Insert Pictures

1. A hoist is used to raise a railway cars to the top of a hill. The railway cars travel a distance of 787.0 feet at an angle of 31.8° , approximately rising to a height of 1766.5 feet above sea level. Find the elevation of the lower end of the inclined plane.



- a. 273.0 ft.
- b. 1097.6 ft.
- c. 1278.5 ft.
- d. 1351.8 ft.

Customizing Mathematical Assessment for Learning Outcomes



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