

The number of permutations of 8 objects taken 3 at a time is —

- A 40,320
- B 6,720
- C 4,920
- D 336

If y varies inversely as the square root of x , what is the constant of proportionality if $y = 16$ when $x = 4$?

- A 4
- B 8
- C 32
- D 64

Which of the following describes the root(s) of the equation $9x^2 = 6x - 1$?

- A** Exactly one real root
- B** Two distinct real roots
- C** Exactly one imaginary root
- D** Two distinct imaginary roots

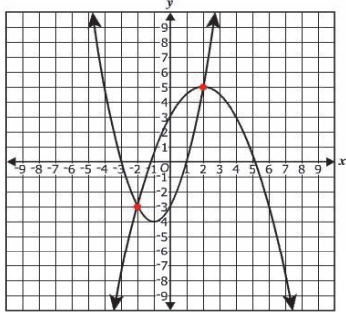
Algebra II
Released Test Spring 2014
Answer Key

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description						
1	MC	B	001	Expressions and Operations						
2	MC	A	001	Expressions and Operations						
3	MC	D	001	Expressions and Operations						
4	MC	D	001	Expressions and Operations						
5	MC	A	001	Expressions and Operations						
6	MC	D	001	Expressions and Operations						
7	MC	D	001	Expressions and Operations						
8	TEI	<p>3, x^2, and y^2 should be placed in the box to the left of the radical sign. The order in which these are placed in this box does not matter.</p> <p>6 and y should be placed in the box to the right of the radical sign. The order in which these are placed in this box does not matter.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p style="font-size: small; margin: 0;">Directions: Click and drag each selected term to the correct box.</p> <p style="margin: 10px 0 0 20px;">Simplify completely: $\sqrt[3]{162x^6y^7}$</p> <div style="display: flex; align-items: center; justify-content: center; margin: 10px 0;"> <div style="border: 1px solid gray; padding: 2px 5px; margin-right: 5px;">$3x^2y^2$</div> <div style="margin-right: 5px;">$\sqrt[3]{$</div> <div style="border: 1px solid gray; padding: 2px 5px; margin-right: 5px;">$6y$</div> <div style="margin-right: 5px;">$}$</div> <div style="border: 1px solid gray; padding: 5px;"> <table style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">9</td> </tr> <tr> <td style="padding: 2px 5px;">x</td> <td style="padding: 2px 5px;">x^3 x^4</td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">y^3 y^4</td> </tr> </table> </div> </div> </div>	2	9	x	x^3 x^4		y^3 y^4	001	Expressions and Operations
2	9									
x	x^3 x^4									
	y^3 y^4									

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
9	MC	C	001	Expressions and Operations
10	TEI	<p>$(2x - 5)$ (the second answer from the left) and $(4x + y)$ (the fourth answer from the left) must be placed inside the box.</p> <p>Both of these answers, and only these answers, must be selected. The order in which they are placed in the box does not matter.</p> <div data-bbox="495 586 1398 1133" style="border: 1px solid black; padding: 10px;"> <p style="background-color: #cccccc; margin: -10px -10px 10px -10px; padding: 2px;">Directions: Click and drag each selected binomial to the box.</p> <p style="margin-top: 10px;">Factor the following polynomial.</p> $8x^2 - 18xy - 5y^2 = (2x - 5y) (4x + y)$ <div style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> $(x + 5y)$ $(2x - y)$ $(4x + 5y)$ $(8x - y)$ </div> </div>	001	Expressions and Operations
11	MC	B	001	Expressions and Operations

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
12	TEI	<p>i^{33} (the second box from the left) and i^{21} (the third box from the left) Both of these answers, and only these answers, must be selected.</p> <div data-bbox="491 480 1394 1024" style="border: 1px solid black; padding: 10px;"> <p>Directions: Click on the box to choose each expression you want to select. You must select all the correct expressions.</p> <p>Identify each expression that is equivalent to i.</p> <div style="text-align: center;"> <div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid gray; padding: 2px 5px;">i^{47}</div> <div style="border: 1px solid gray; padding: 2px 5px;">i^{33}</div> <div style="border: 1px solid gray; padding: 2px 5px;">i^{21}</div> <div style="border: 1px solid gray; padding: 2px 5px;">i^{15}</div> </div> </div> </div>	001	Expressions and Operations
13	MC	A	001	Expressions and Operations
14	MC	C	002	Equations and Inequalities
15	MC	A	002	Equations and Inequalities

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
16	TEI	$\{-2 \pm 2\sqrt{5}\}$ (the fourth box from the top) <div style="border: 1px solid gray; padding: 10px; margin: 10px 0;"> <p>Directions: Click on the correct answer.</p> <p>What is the solution set to $x^2 = 16 - 4x$?</p> <div style="border: 1px solid gray; padding: 5px; width: fit-content; margin: 0 auto;"> <input type="radio"/> $\{\pm 4\}$ <input type="radio"/> $\{2 \pm 2\sqrt{5}\}$ <input type="radio"/> $\{2 \pm 2i\sqrt{3}\}$ <input checked="" type="radio"/> $\{-2 \pm 2\sqrt{5}\}$ <input type="radio"/> $\{-2 \pm 2i\sqrt{3}\}$ </div> </div>	002	Equations and Inequalities
17	MC	C	002	Equations and Inequalities
18	MC	B	002	Equations and Inequalities
19	MC	A	002	Equations and Inequalities
20	MC	B	002	Equations and Inequalities
21	MC	D	002	Equations and Inequalities

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
22	TEI	<p>Points $(-2, -3)$ and $(2, 5)$ Both of these points, and only these points, must be plotted on the coordinate plane.</p> <p>Directions: Click on the grid to plot each point that is a solution. You must plot all correct solutions.</p> <p>The graph of a system of two equations is shown on the grid. Identify only the apparent solutions to this system of equations.</p> 	002	Equations and Inequalities
23	MC	D	002	Equations and Inequalities
24	MC	C	002	Equations and Inequalities

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
25	TEI	Typed Response: 6 (and all equivalent answers) <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Directions: Type your answer in the box.</p> <p>If $x \neq 0$, what is the solution to the following equation?</p> $\frac{1-x}{x} + 2 = \frac{7}{x}$ <p>$x =$ <input style="width: 50px; height: 20px;" type="text" value="6"/></p> </div>	002	Equations and Inequalities
26	MC	D	002	Equations and Inequalities
27	MC	D	003	Functions and Statistics

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description
28	TEI	Typed Response: 250 (and all equivalent answers) <div style="border: 1px solid black; padding: 10px; margin: 5px 0;"> <p style="background-color: #cccccc; margin: 0; padding: 2px;">Directions: Type your answer in the box.</p> <p style="margin: 10px 0 0 40px;">What is the sum of this infinite series?</p> $100 + 60 + 36 + \frac{108}{5} + \dots$ <div style="margin: 10px 0 0 120px;"> <input style="width: 40px; height: 15px; border: 1px solid black;" type="text" value="250"/> </div> </div>	003	Functions and Statistics
29	MC	D	003	Functions and Statistics
30	MC	C	003	Functions and Statistics
31	MC	C	003	Functions and Statistics
32	MC	D	003	Functions and Statistics
33	MC	B	003	Functions and Statistics
34	MC	D	003	Functions and Statistics
35	MC	A	003	Functions and Statistics
36	MC	A	003	Functions and Statistics
37	MC	D	003	Functions and Statistics
38	MC	A	003	Functions and Statistics
39	MC	B	003	Functions and Statistics

Test Sequence Number	Item Type: Multiple Choice (MC) or Technology Enhanced Item (TEI)	Correct Answer	Reporting Category	Reporting Category Description								
40	MC	C	003	Functions and Statistics								
41	TEI	<p>$(-3,0)$, $(-2,0)$, $(0,-12)$, and $(2,0)$ All four ordered pairs, and only these ordered pairs, must be selected.</p> <p>Directions: Click on a box to choose each ordered pair you want to select. You must select all correct ordered pairs.</p> <p>Identify each of the x- and y-intercepts of the function $h(x) = x^3 + 3x^2 - 4x - 12$.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td><input checked="" type="checkbox"/> $(-3, 0)$</td> <td><input type="checkbox"/> $(0, -2)$</td> </tr> <tr> <td><input checked="" type="checkbox"/> $(-2, 0)$</td> <td><input type="checkbox"/> $(0, 0)$</td> </tr> <tr> <td><input checked="" type="checkbox"/> $(0, -12)$</td> <td><input type="checkbox"/> $(0, 2)$</td> </tr> <tr> <td><input type="checkbox"/> $(0, -3)$</td> <td><input checked="" type="checkbox"/> $(2, 0)$</td> </tr> </table>	<input checked="" type="checkbox"/> $(-3, 0)$	<input type="checkbox"/> $(0, -2)$	<input checked="" type="checkbox"/> $(-2, 0)$	<input type="checkbox"/> $(0, 0)$	<input checked="" type="checkbox"/> $(0, -12)$	<input type="checkbox"/> $(0, 2)$	<input type="checkbox"/> $(0, -3)$	<input checked="" type="checkbox"/> $(2, 0)$	003	Functions and Statistics
<input checked="" type="checkbox"/> $(-3, 0)$	<input type="checkbox"/> $(0, -2)$											
<input checked="" type="checkbox"/> $(-2, 0)$	<input type="checkbox"/> $(0, 0)$											
<input checked="" type="checkbox"/> $(0, -12)$	<input type="checkbox"/> $(0, 2)$											
<input type="checkbox"/> $(0, -3)$	<input checked="" type="checkbox"/> $(2, 0)$											
42	MC	B	003	Functions and Statistics								
43	MC	B	003	Functions and Statistics								
44	MC	B	003	Functions and Statistics								
45	MC	C	003	Functions and Statistics								
46	MC	C	003	Functions and Statistics								
47	MC	D	003	Functions and Statistics								
48	MC	D	003	Functions and Statistics								
49	MC	C	003	Functions and Statistics								
50	MC	A	003	Functions and Statistics								

Spring 2014 Released
Algebra II Standards of Learning Test
Total Raw Score to Scaled Score Conversion Table

Total Raw Score If you get this many items correct:	Total Scaled Score Then your converted scaled score is:
0	0
1	159
2	198
3	222
4	239
5	253
6	265
7	275
8	284
9	293
10	300
11	307
12	314
13	321
14	327
15	333
16	338
17	344
18	349
19	355
20	360
21	365
22	370
23	375
24	380
25	385
26	390
27	395
28	400
29	405
30	411
31	416
32	421
33	427
34	433
35	439
36	445
37	451
38	458
39	465
40	473
41	481
42	490
43	499
44	510
45	523
46	538
47	557
48	582
49	600
50	600

A **total raw score** (left column) is converted to a **total scaled score** (right column). The total scaled score may range from 0 to 600.

A scaled score of 400 or more means the student passed the SOL test, while a scaled score of 399 or less means the student did not pass the test. A scaled score of 500 or more indicates the student passed the SOL test at an advanced level.

