

Did you hear about...

A	B	C	D	E	F	G	H
The	very	sad	GUY	who	tried	to	KISS
I	J	K	L	M	N	O	P
his	girl	friend	in	the	fog	and	mist?

Answers A-H:

$\frac{\sqrt{11}}{2}$	TO
$\frac{\sqrt{5}}{2}$	WAS
$\frac{\sqrt{2}}{6}$	HUG
$\frac{2\sqrt{10}}{5}$	TRIED
$4\sqrt{5}$	SAD
$\frac{5\sqrt{3}}{3}$	THE
$\frac{3\sqrt{5}}{10}$	BIG
$\frac{\sqrt{6}}{2}$	WHO
$\frac{\sqrt{3}}{2}$	KISS
$\frac{2\sqrt{7}}{7}$	VERY
$7\sqrt{2}$	GUY
$\frac{2\sqrt{6}}{3}$	GIRL

Rationalize the denominator and simplify each expression below. Find your answer in the adjacent answer column and notice the word next to it. Write this word in the box containing the letter of that exercise. Keep working and you will hear about a mistake.

(A) $\frac{5\sqrt{3}}{\sqrt{3}\sqrt{3}} = \frac{5\sqrt{3}}{3}$ (I) $\frac{30\sqrt{2}}{\sqrt{18}\sqrt{2}} = \frac{30\sqrt{2}}{\sqrt{36}} = \frac{30\sqrt{2}}{6} = 5\sqrt{2}$

(B) $\frac{2\sqrt{7}}{\sqrt{7}\sqrt{7}} = \frac{2\sqrt{7}}{7}$ (J) $\frac{8\sqrt{5}}{\sqrt{20}\sqrt{5}} = \frac{8\sqrt{5}}{10} = \frac{4\sqrt{5}}{5}$

(C) $\frac{20\sqrt{5}}{\sqrt{5}\sqrt{5}} = \frac{20\sqrt{5}}{5} = 4\sqrt{5}$ (K) $\frac{9\sqrt{5}}{2\sqrt{45}\sqrt{5}} = \frac{9\sqrt{5}}{2 \cdot 3\sqrt{5}} = \frac{9\sqrt{5}}{6\sqrt{5}} = \frac{3}{2}$

(D) $\frac{14\sqrt{2}}{\sqrt{2}\sqrt{2}} = \frac{14\sqrt{2}}{2} = 7\sqrt{2}$ (L) $\frac{\sqrt{7}\sqrt{3}}{\sqrt{3}\sqrt{3}} = \frac{\sqrt{21}}{3}$

(E) $\frac{3\sqrt{6}}{\sqrt{6}\sqrt{6}} = \frac{3\sqrt{6}}{6} = \frac{\sqrt{6}}{2}$ (M) $\frac{\sqrt{5}\sqrt{10}}{\sqrt{10}\sqrt{10}} = \frac{\sqrt{50}}{10} = \frac{5\sqrt{2}}{10} = \frac{\sqrt{2}}{2}$

(F) $\frac{4\sqrt{10}}{\sqrt{10}\sqrt{10}} = \frac{4\sqrt{10}}{10} = \frac{2\sqrt{10}}{5}$ (N) $\frac{3\sqrt{6}}{\sqrt{2}} = 3\sqrt{3}$

(G) $\frac{11\sqrt{11}}{\sqrt{11}\sqrt{11}} = \frac{11\sqrt{11}}{11} = \sqrt{11}$ (O) $\frac{\sqrt{3}}{2\sqrt{6}} \cdot \frac{\sqrt{2}\sqrt{2}}{\sqrt{2}\sqrt{2}} = \frac{\sqrt{3}}{2\sqrt{2}\sqrt{2}} = \frac{\sqrt{3}}{4}$

(H) $\frac{3\sqrt{3}}{\sqrt{12}\sqrt{3}} = \frac{3\sqrt{3}}{\sqrt{36}} = \frac{3\sqrt{3}}{6} = \frac{\sqrt{3}}{2}$ (P) $\frac{2\sqrt{3}}{\sqrt{15}} = \frac{2\sqrt{3}}{\sqrt{5}\sqrt{3}} = \frac{2}{\sqrt{5}}$

Answers I-P:

$\frac{3\sqrt{2}}{4}$	BUT
$\frac{\sqrt{2}}{4}$	AND
$\frac{\sqrt{21}}{3}$	IN
$\frac{4\sqrt{5}}{5}$	GIRL
$\frac{6\sqrt{2}}{5}$	LOST
$\frac{3\sqrt{3}}{10}$	FOG
$\frac{3\sqrt{5}}{10}$	FRIEND
$\frac{\sqrt{2}}{2}$	THE
$5\sqrt{2}$	HIS
$\frac{2\sqrt{2}}{5}$	A
$\frac{2\sqrt{5}}{5}$	MIST
$\frac{9\sqrt{3}}{10}$	TODAY

OBJECTIVE 3-k: To simplify quotients containing radicals by rationalizing the denominator.



Why Didn't Krok Like to Go Sailing With the Baseball Uniform Designer?

Key



Simplify each expression below and find your answer in the corresponding answer column. Write the letter of the exercise in the box that contains the number of the answer.

- | | | | |
|---|---|------|----------------|
| L | $\sqrt{8}\sqrt{4}\sqrt{12} = 2\sqrt{2}$ (12) | (18) | $7\sqrt{2}$ |
| I | $\sqrt{45}\sqrt{4}\sqrt{5} = 3\sqrt{5}$ (25) | (14) | $5\sqrt{5}$ |
| A | $\sqrt{50}\sqrt{25}\sqrt{2} = 5\sqrt{2}$ (4) | (12) | $2\sqrt{2}$ |
| T | $\sqrt{12}\sqrt{4}\sqrt{3} = 2\sqrt{3}$ (20) | (4) | $5\sqrt{2}$ |
| C | $\sqrt{98}\sqrt{49}\sqrt{2} = 7\sqrt{2}$ (18) | (28) | $4\sqrt{3}$ |
| S | $\sqrt{48}\sqrt{6}\sqrt{3} = 4\sqrt{3}$ (28) | (20) | $2\sqrt{3}$ |
| E | $\sqrt{125}\sqrt{25}\sqrt{5} = 5\sqrt{5}$ (14) | (25) | $3\sqrt{5}$ |
| A | $\sqrt{20}\sqrt{4}\sqrt{5} = 2\sqrt{5}$ (22) | (8) | $3\sqrt{7}$ |
| S | $\sqrt{72}\sqrt{36}\sqrt{2} = 6\sqrt{2}$ (1) | (1) | $6\sqrt{2}$ |
| Y | $\sqrt{63}\sqrt{9}\sqrt{7} = 3\sqrt{7}$ (8) | (7) | $10\sqrt{2}$ |
| E | $\sqrt{144} = 12$ (29) | (6) | $4\sqrt{2}$ |
| W | $\sqrt{32}\sqrt{16}\sqrt{2} = 4\sqrt{2}$ (6) | (22) | $2\sqrt{5}$ |
| D | $\sqrt{75}\sqrt{25}\sqrt{3} = 5\sqrt{3}$ (15) | (27) | 12 |
| A | $\sqrt{200}\sqrt{100}\sqrt{2} = 10\sqrt{2}$ (7) | (15) | $5\sqrt{3}$ |
| S | $5\sqrt{18}\sqrt{4}\sqrt{2} = 5 \cdot 3\sqrt{2} = 15\sqrt{2}$ (19) | (19) | $6\sqrt{7}$ |
| U | $3\sqrt{28}\sqrt{4}\sqrt{7} = 3 \cdot 2\sqrt{7} = 6\sqrt{7}$ (13) | (13) | $24\sqrt{3}$ |
| A | $2\sqrt{1000}\sqrt{100}\sqrt{10} = 2 \cdot 10\sqrt{10} = 20\sqrt{10}$ (3) | (3) | $24\sqrt{2}$ |
| P | $\sqrt{1,000,000} = 1000$ | (9) | $15\sqrt{2}$ |
| E | $3\sqrt{128}\sqrt{6}\sqrt{2} = 3 \cdot 8\sqrt{2} = 24\sqrt{2}$ (5) | (5) | $16\sqrt{5}$ |
| K | $8\sqrt{27}\sqrt{4}\sqrt{3} = 8 \cdot 3\sqrt{3} = 24\sqrt{3}$ (23) | (23) | 1000 |
| L | $4\sqrt{80}\sqrt{16}\sqrt{5} = 4 \cdot 4\sqrt{5} = 16\sqrt{5}$ (16) | (16) | $20\sqrt{10}$ |
| H | $-3\sqrt{54}\sqrt{9}\sqrt{6} = -3 \cdot 3\sqrt{6} = -9\sqrt{6}$ (10) | (10) | $-8\sqrt{6}$ |
| A | $-7\sqrt{40}\sqrt{4}\sqrt{10} = -7 \cdot 2\sqrt{10} = -14\sqrt{10}$ (21) | (21) | $30\sqrt{3}$ |
| B | $-8\sqrt{121} = -8 \cdot 11 = -88$ | (11) | $-14\sqrt{10}$ |
| S | $2\sqrt{500} = 2 \cdot \sqrt{100}\sqrt{5} = 2 \cdot 10\sqrt{5} = 20\sqrt{5}$ (24) | (24) | $20\sqrt{5}$ |
| T | $-4\sqrt{24}\sqrt{4}\sqrt{6} = -4 \cdot 2\sqrt{6} = -8\sqrt{6}$ (26) | (26) | $15\sqrt{7}$ |
| Z | $3\sqrt{175}\sqrt{5}\sqrt{7} = 3 \cdot 5\sqrt{7} = 15\sqrt{7}$ (2) | (2) | $-9\sqrt{6}$ |
| C | $5\sqrt{108}\sqrt{36}\sqrt{3} = 5 \cdot 6\sqrt{3} = 30\sqrt{3}$ (17) | (17) | -88 |

1	S	2	H	3	E	4	A	5	L	6	W	7	A	8	N	9	S	10	T	11	A	12	L	13	K	14	E	15	D	16	A	17	B	18	O	19	V	20	T	21	C	22	A	23	P	24	S	25	I	26	Z	27	E	28	S
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---

OBJECTIVE 3-d: To simplify square roots of numbers that have perfect square factors.