

Estimation by Rounding to One Significant Figure Mosaic

Instructions:

Estimate the answer to each question by rounding to one significant figure. Choose the correct range in the key to reveal a picture.

J								
I								
H								
G								
F								
E								
D								
C								
B								
A								
	1	2	3	4	5	6	7	8

Red	Yellow	Brown	Green	Blue	Grey
0 – 20	25 – 50	60 – 80	90 – 110	150 – 500	600 – 8000

- | | | | | | |
|----|-------------------|-------|----|----------------------------|-------|
| J1 | 17×9.8 | _____ | H1 | 7.3×49 | _____ |
| J2 | 35.9×3.7 | _____ | H2 | 19.71×8.6 | _____ |
| J3 | $12.5 + 79.2$ | _____ | H3 | 75.1×2.9 | _____ |
| J4 | 4.7×19 | _____ | H4 | $58 + 199$ | _____ |
| J5 | $321 - 97$ | _____ | H5 | $102 - 34$ | _____ |
| J6 | $1209 \div 3.95$ | _____ | H6 | $255 - 3.1$ | _____ |
| J7 | 237×1.8 | _____ | H7 | $87 \div 0.48$ | _____ |
| J8 | $193 \div 0.47$ | _____ | H8 | $23 \div 0.12$ | _____ |
| | | | | | |
| I1 | $39 \div 0.23$ | _____ | G1 | $395 - 2.78$ | _____ |
| I2 | $891.7 - 477$ | _____ | G2 | 87×3.5 | _____ |
| I3 | $252 \div 3.49$ | _____ | G3 | 5.7×0.31 | _____ |
| I4 | $128 - 5.7$ | _____ | G4 | $2.6 \div 0.51$ | _____ |
| I5 | 31×2.45 | _____ | G5 | 14×0.53 | _____ |
| I6 | $811 - 393.8$ | _____ | G6 | $27.9 - 15.2$ | _____ |
| I7 | $52 \div 0.11$ | _____ | G7 | $(8.3 + 7.5) \times 9.8$ | _____ |
| I8 | $147 + 309.1$ | _____ | G8 | $(24.1 - 1.3) \times 11.6$ | _____ |

F1 $\frac{137}{0.46}$	_____	D1 18.2^2	_____	B1 $6.92 \div 0.0013$	_____
F2 $\frac{32.7}{2.4}$	_____	D2 $2.17^{2.1}$	_____	B2 $23.49 \div 0.0123$	_____
F3 $(4.01 + 2.1) \times 2.9$	_____	D3 $3.1^{2.9}$	_____	B3 $37.2 - 5.22^{1.8}$	_____
F4 $(11.7 - 3.8) \times 1.5$	_____	D4 $19.7 - 4.23^2$	_____	B4 $(-2.2)^3 + 18.6$	_____
F5 $\frac{3.1 + 7.4}{1.9}$	_____	D5 $2.3^{2.13} + 1.9^3$	_____	B5 $\frac{0.97 + 10.5}{1.99}$	_____
F6 18.2×0.31	_____	D6 0.73×4.9	_____	B6 $3 \times \pi$	_____
F7 $\frac{1.1 \times 7.6}{0.53}$	_____	D7 $1.88 \times 1.7^{2.4}$	_____	B7 $43.1^{2.07}$	_____
F8 $\frac{347 \times 2.5}{1.84}$	_____	D8 $\frac{5733}{19.7 \times 2.43}$	_____	B8 $9.3^{3.44}$	_____
E1 $409 - 0.02$	_____	C1 $\frac{81 \times 9.5}{2.1 \times 1.5}$	_____	A1 $\frac{6.8}{0.13^2}$	_____
E2 $\frac{41.7}{4.44}$	_____	C2 $\frac{391}{12.4^2}$	_____	A2 $\frac{4124}{(1.19 + 1.45)^2}$	_____
E3 $8.93 + 32.4$	_____	C3 $\sqrt{9.46}$	_____	A3 $\frac{2.38 \times 143}{0.125}$	_____
E4 $(6.7 + 2.5) \times 0.93$	_____	C4 $\sqrt{95.2}$	_____	A4 $(0.51)^2$	_____
E5 $\frac{33.6}{3.9}$	_____	C5 $\sqrt[3]{1275}$	_____	A5 $18.5 - 4.102$	_____
E6 3.1^2	_____	C6 $14.75 + \frac{2.1}{0.534}$	_____	A6 299×3.1	_____
E7 $1.94^{2.1}$	_____	C7 $\frac{3.1^{2.44}}{0.49}$	_____	A7 0.0015×1348^2	_____
E8 $(8.2 + 11.5)^{1.9}$	_____	C8 $3.7(8.9 + 126.4)$	_____	A8 $(-33.5)^{2.17}$	_____

Estimation by Rounding to One Significant Figure Mosaic Answers

Instructions:

Estimate the answer to each question by rounding to one significant figure. Choose the correct range in the key to reveal a picture.

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- | | | | |
|----------------------|-----------------------------|-------------------------------|-----------------------------------|
| J1 17×9.8 | $20 \times 10 = 200$ (blue) | H1 7.3×49 | $7 \times 50 = 350$ (blue) |
| J2 35.9×3.7 | $40 \times 4 = 160$ (blue) | H2 19.71×8.6 | $20 \times 9 = 180$ (blue) |
| J3 $12.5 + 79.2$ | $10 + 80 = 90$ (green) | H3 75.1×2.9 | $80 \times 3 = 240$ (blue) |
| J4 4.7×19 | $5 \times 20 = 100$ (green) | H4 $58 + 199$ | $60 + 200 = 260$ (blue) |
| J5 $321 - 97$ | $300 - 100 = 200$ (blue) | H5 $102 - 34$ | $100 - 30 = 70$ (brown) |
| J6 $1209 \div 3.95$ | $1000 \div 4 = 250$ (blue) | H6 $255 - 3.1$ | $300 - 3 = 297$ (blue) |
| J7 237×1.8 | $200 \times 2 = 400$ (blue) | H7 $87 \div 0.48$ | $90 \div 0.5 = 180$ (blue) |
| J8 $193 \div 0.47$ | $200 \div 0.5 = 400$ (blue) | H8 $23 \div 0.12$ | $20 \div 0.1 = 200$ (blue) |
| | | | |
| I1 $39 \div 0.23$ | $40 \div 0.2 = 200$ (blue) | G1 $395 - 2.78$ | $400 - 3 = 397$ (blue) |
| I2 $891.7 - 477$ | $900 - 500 = 400$ (blue) | G2 87×3.5 | $90 \times 4 = 360$ (blue) |
| I3 $252 \div 3.49$ | $300 \div 3 = 100$ (green) | G3 5.7×0.31 | $6 \times 0.3 = 1.8$ (red) |
| I4 $128 - 5.7$ | $100 - 6 = 94$ (green) | G4 $2.6 \div 0.51$ | $3 \div 0.5 = 6$ (red) |
| I5 31×2.45 | $30 \times 2 = 60$ (brown) | G5 14×0.53 | $10 \times 0.5 = 5$ (red) |
| I6 $811 - 393.8$ | $800 - 400 = 400$ (blue) | G6 $27.9 - 15.2$ | $30 - 20 = 10$ (red) |
| I7 $52 \div 0.11$ | $50 \div 0.1 = 500$ (blue) | G7 $(8.3 + 7.5) \times 9.8$ | $(8 + 8) \times 10 = 160$ (blue) |
| I8 $147 + 309.1$ | $100 + 300 = 400$ (blue) | G8 $(24.1 - 1.3) \times 11.6$ | $(20 - 1) \times 10 = 190$ (blue) |

F1	$\frac{137}{0.46}$	$\frac{100}{0.5} = 200$ (blue)	D1	18.2^2	$20^2 = 400$ (blue)	B1	$6.92 \div 0.0013$	$7 \div 0.001 = 7000$ (grey)
F2	$\frac{32.7}{2.4}$	$\frac{30}{2} = 15$ (red)	D2	$2.17^{2.1}$	$2^2 = 4$ (red)	B2	$23.49 \div 0.0123$	$20 \div 0.01 = 2000$ (grey)
F3	$(4.01 + 2.1) \times 2.9$	$(4 + 2) \times 3 = 18$ (red)	D3	$3.1^{2.9}$	$3^3 = 27$ (yellow)	B3	$37.2 - 5.22^{1.8}$	$40 - 5^2 = 15$ (red)
F4	$(11.7 - 3.8) \times 1.5$	$(10 - 4) \times 2 = 12$ (red)	D4	$19.7 - 4.23^2$	$20 - 4^2 = 4$ (red)	B4	$(-2.2)^3 + 18.6$	$(-2)^3 + 20 = 12$ (red)
F5	$\frac{3.1 + 7.4}{1.9}$	$\frac{3 + 7}{2} = 5$ (red)	D5	$2.3^{2.13} + 1.9^3$	$2^2 + 2^3 = 12$ (red)	B5	$\frac{0.97 + 10.5}{1.99}$	$\frac{1 + 10}{2} = 5.5$ (red)
F6	18.2×0.31	$20 \times 0.3 = 6$ (red)	D6	0.73×4.9	$0.7 \times 5 = 3.5$ (red)	B6	$3 \times \pi$	$3 \times 3 = 9$ (red)
F7	$\frac{1.1 \times 7.6}{0.53}$	$\frac{1 \times 8}{0.5} = 16$ (red)	D7	$1.88 \times 1.7^{2.4}$	$2 \times 2^2 = 8$ (red)	B7	$43.1^{2.07}$	$40^2 = 1600$ (grey)
F8	$\frac{347 \times 2.5}{1.84}$	$\frac{300 \times 3}{2} = 450$ (blue)	D8	$\frac{5733}{19.7 \times 2.43}$	$\frac{6000}{20 \times 2} = 150$ (blue)	B8	$9.3^{3.44}$	$9^3 = 729$ (grey)
E1	$409 - 0.02$	$400 - 0.02 = 399.98$ (blue)	C1	$\frac{81 \times 9.5}{2.1 \times 1.5}$	$\frac{80 \times 10}{2 \times 2} = 200$ (blue)	A1	$\frac{6.8}{0.13^2}$	$\frac{7}{0.1^2} = 700$ (grey)
E2	$\frac{41.7}{4.44}$	$\frac{40}{4} = 10$ (red)	C2	$\frac{391}{12.4^2}$	$\frac{400}{10^2} = 4$ (red)	A2	$\frac{4124}{(1.19 + 1.45)^2}$	$\frac{4000}{(1 + 1)^2} = 1000$ (grey)
E3	$8.93 + 32.4$	$9 + 30 = 39$ (yellow)	C3	$\sqrt{9.46}$	$\sqrt{9} = 3$ (red)	A3	$\frac{2.38 \times 143}{0.125}$	$\frac{2 \times 100}{0.1} = 2000$ (grey)
E4	$(6.7 + 2.5) \times 0.93$	$(7 + 3) \times 0.9 = 9$ (red)	C4	$\sqrt{95.2}$	$\sqrt{100} = 10$ (red)	A4	$(0.51)^2$	$0.5^2 = 0.25$ (red)
E5	$\frac{33.6}{3.9}$	$\frac{30}{4} = 7.5$ (red)	C5	$\sqrt[3]{1275}$	$\sqrt[3]{1000} = 10$ (red)	A5	$18.5 - 4.102$	$20 - 4 = 16$ (red)
E6	3.1^2	$3^2 = 9$ (red)	C6	$14.75 + \frac{2.1}{0.534}$	$10 + \frac{2}{0.5} = 14$ (red)	A6	299×3.1	$300 \times 3 = 900$ (grey)
E7	$1.94^{2.1}$	$2^2 = 4$ (red)	C7	$\frac{3.1^{2.44}}{0.49}$	$\frac{3^2}{0.5} = 18$ (red)	A7	0.0015×1348^2	$0.002 \times 1000^2 = 2000$ (grey)
E8	$(8.2 + 11.5)^{1.9}$	$(8 + 10)^2 = 324$ (blue)	C8	$3.7(8.9 + 126.4)$	$4(9 + 100) = 436$ (blue)	A8	$(-33.5)^{2.17}$	$(-30)^2 = 900$ (grey)