

ANSWER KEY

Quiz answers

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High school · 15 questions. Round to 3 significant figures unless the answer is exact.

QUICK CHECK

1

C

2

A

3

D

4

A

5

B

6

B

7

A

8

D

9

C

10

B

11

D

12

C

A. Multiple choice, with working

1 C. 3.15×10^{-9} m

$1 \text{ nm} = 10^{-9} \text{ m}$, so $3.15 \text{ nm} = 3.15 \times 10^{-9} \text{ m}$

2 A. 2.6×10^3 m

2.6 km : 3 steps down, decimal 3 places right = $2.6 \times 10^3 \text{ m}$

3 D. 9.99×10^7

$99,900,000 = 9.99 \times 10^7$

4 A. 50,800 μm

$2 \text{ in} \times 2.54 \text{ cm/1 in} \times 10000 \mu\text{m/1 cm} = 50,800 \mu\text{m}$

5 B. 183 cm

$6 \text{ ft} \times 12 \text{ in/1 ft} \times 2.54 \text{ cm/1 in} \approx 183 \text{ cm}$

6 B. 2.02 ha

$5 \text{ acre} \times 0.40468564224 \text{ ha/1 acre} \approx 2.02 \text{ ha}$

7 A. 4.5 m^2

$45,000 \text{ cm}^2 \times (1 \text{ m/100 cm})^2 = 4.5 \text{ m}^2$

8 D. 11,300 kg/m^3

$11.3 \text{ g/cm}^3 \times 1 \text{ kg/1000 g} \times (100 \text{ cm/1 m})^3 = 11,300 \text{ kg/m}^3$

9 C. 1.2 g/cm^3

$1,200 \text{ kg/m}^3 \times 1000 \text{ g/1 kg} \times (1 \text{ m/100 cm})^3 = 1.2 \text{ g/cm}^3$

10 B. 33.3 m/s

$120 \text{ km/h} \times 1000 \text{ m/1 km} \times 1 \text{ h/3600 s} \approx 33.3 \text{ m/s}$

11 D. 68 °F

Multiply by 9/5, then add 32: $20 \times 9/5 + 32 = 68 \text{ °F}$.

12 C. M

mega (M) = 10^6 .

B. Short answer (model answers)

13 26.5 oz

$0.75 \text{ kg} \times 1 \text{ lb/0.45359237 kg} \times 16 \text{ oz/1 lb} \approx 26.5 \text{ oz}$

14 14.9 km/L

$35 \text{ mi/gal} \times 1.609344 \text{ km/1 mi} \times 1 \text{ gal/3.785411784 L} \approx 14.9 \text{ km/L}$

15 15,000 μg

$0.25 \text{ mg/kg} \times 60 \text{ kg} = 15 \text{ mg}$; $\times 1000 = 15,000 \mu\text{g}$