

Answers to the Math Primer Questions

Units of Distance

1. How many inches is equal to 5'-6"?
 - a. 56
 - b. 66 Correct**
 - c. 5.5
 - d. 168

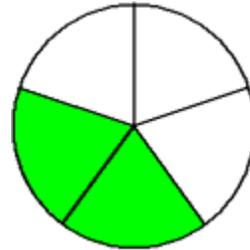
2. Expressed as a decimal, how many feet is equal to 1'-6"?
 - a. 0.5
 - b. 1
 - c. 1.5 Correct**
 - d. 1.6

3. Expressed as a decimal, how many feet is equal to 12'-9"?
 - a. 12.75 Correct**
 - b. 12.9
 - c. 1.75
 - d. 1.9

Fractions Are Parts

1. What portion of the circle is shaded?

- a. $\frac{1}{3}$
- b. $\frac{3}{5}$
- c. $\frac{2}{6}$
- d. $\frac{2}{5}$ **Correct**



2. If one-third of 24 prestressing strands in a beam are debonded, then how many strands are debonded?

- a. 3
- b. 8 **Correct**
- c. 12
- d. 16

Fractions and Decimals

3. What is the decimal equivalent of $3\frac{5}{8}$?

- a. 3.325
- b. 3.625 **Correct**
- c. 3.580
- d. 3.750

4. What is the decimal equivalent of $2\frac{1}{4}$?

- a. 2.125
- b. 2.25 **Correct**
- c. 2.375
- d. 2.5

Adding and Subtracting Fractions and Common Denominator

1. $\frac{1}{2} + \frac{1}{2} = ?$

a. $\frac{1}{4}$

b. $\frac{2}{4}$

c. **1** Correct

d. $\frac{4}{2}$

2. $\frac{3}{4} + \frac{1}{8} = ?$

a. $\frac{5}{12}$

b. $\frac{11}{16}$

c. $\frac{5}{8}$

d. **$\frac{7}{8}$** Correct

3. $\frac{3}{4} - \frac{1}{8} = ?$

a. $\frac{5}{12}$

b. $\frac{11}{16}$

c. **$\frac{5}{8}$** Correct

d. $\frac{7}{8}$

Order of Operations

1. $5 \times (10 - 1) = ?$

a. 49

b. 45 Correct

c. 14

d. 19

2. $48 \div (4 + 4) = ?$

a. 3

b. 16

c. 6 Correct

d. 13

3. $9 + 9 \times 4 = ?$

a. 49

b. 45 Correct

c. 72

d. 54

4. $(6 + 25 - 7) \div 6 = ?$

a. 6.33

b. 4 Correct

c. 144

d. 35

5. $\frac{43-1}{4+2} + 10 = ?$

a. 22.5

b. 8.67

c. 17 Correct

d. 9

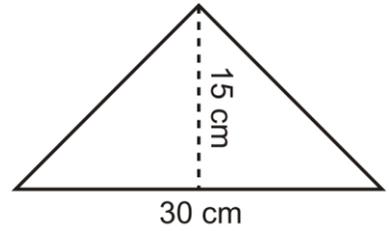
Finding a Percent of a Number

1. What is 50% of 132 grams?
 - a. 46
 - b. 61 grams
 - c. 66 grams Correct**
 - d. 82
2. If a prestressing strand has an ultimate tensile strength of 41 kips and we are only allowed to pull the strand to 80% of its ultimate tensile strength, then what is the most force that can be applied to the strand?
 - a. 3.28 kips
 - b. 8.2 kips
 - c. 32.80 kips Correct**
 - d. 73.80 kips
3. During a sieve analysis for a coarse aggregate, 330 g of the total 1,500-g sample was retained on the 3/8" sieve. What is the percent retained for the 3/8" sieve?
 - a. 0.22%
 - b. 22% Correct**
 - c. 45%
 - d. 78%
4. If a plant's mix design required 750 lbs of cementitious materials, what is the weight of fly ash if the fly is 20% of the total cementitious material?
 - a. 150 lbs Correct**
 - b. 30 lbs
 - c. 75 lbs
 - d. 3,000 lbs
5. PCI allows for a single prestressing strand to be stressed 5% over its target final force. What's the upper tolerance limit for the final force of a strand with a target final force of 31,500 lbs?
 - a. 1,575 lbs
 - b. 32,275 lbs
 - c. 33,075 lbs Correct**
 - d. 47,250 lbs

Area

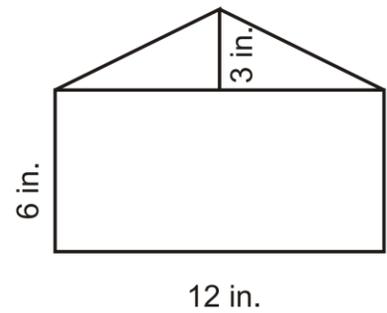
1. Calculate the area of the triangle.

- a. $3,375 \text{ cm}^2$
- b. $6,750 \text{ cm}^2$
- c. 450 cm^2
- d. 225 cm^2 Correct**



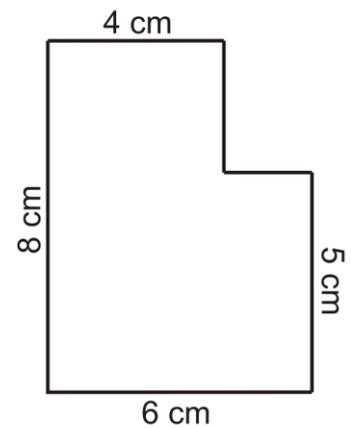
2. What is the area of the figure?

- a. 90 in^2 Correct**
- b. 108 in^2
- c. 156 in^2
- d. 216 in^2



3. What is the area of the figure?

- a. 21 cm^2
- b. 23 cm^2
- c. 42 cm^2 Correct**
- d. 48 cm^2

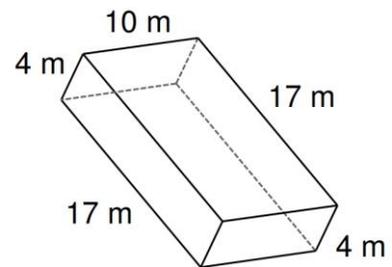


Volume

1. What is the volume of a cube with 5 ft. sides?
 - a. 25 ft.³
 - b. 100 ft.³
 - c. 125 ft.³ Correct**
 - d. Not enough information is provided.

2. How many cubic yards (CY) of concrete is needed to cast a 20'-6" x 11'-0" x 0'-10" wall panel?
 - a. 84 CY
 - b. 4 CY
 - c. 7 CY Correct**
 - d. 188 CY

3. Calculate the volume of the rectangular prism.
 - a. 170 m³
 - b. 680 m³ Correct**
 - c. 920 m³
 - d. 11,560 m³



4. Calculate the volume of the above triangular prism.
 - a. 3.75 CY
 - b. 8.5 CY
 - c. 20 CY
 - d. 15 CY Correct**

