

Number Skills Review

1. $-5+7 = +2$

A) 12 B) -2 ~~C) 2~~ D) -12 E) -35

2. $-4-(-6) = -4+6$
 $= +2$

~~A) 2~~ B) -2 C) 24 D) -10 E) -24

3. $-15-10 = -25$

A) 1 B) 25 C) 5 ~~D) -25~~ E) -5

4. $-3 \times 5 = -15$

A) 2 B) 15 C) -2 D) $\frac{5}{3}$ ~~E) -15~~

5. $-8 \times (-9) = +72$

~~A) 72~~ B) -1 C) 17 D) 1 E) -72

6. $(-24 \div 4) \div 2 = (-6) \div 2$
 $= -3$

A) 1 B) -12 C) 2 ~~D) -3~~ E) 12

7. $2^4 = 2 \times 2 \times 2 \times 2 = 16$

A) 24 B) 8 ~~C) 16~~ D) 42 E) -2

8. $6^2 + 4^2 = 36 + 16$
 $= 52$

~~A) 52~~ B) 42 C) 100 D) 10000 E) 56

9. $\frac{3}{4} - 2\frac{1}{3} = \frac{3}{4} - \frac{2 \cdot 3 + 1}{3} = \frac{3 \cdot 3}{4 \cdot 3} - \frac{7 \cdot 4}{3 \cdot 4} = \frac{9}{12} - \frac{28}{12} = \frac{9-28}{12} = \frac{-19}{12}$

A) -4 B) $-\frac{25}{4}$ C) $-\frac{37}{12}$ D) $-\frac{7}{12}$ E) $-\frac{19}{12}$

10. $-\frac{2 \cdot 2 + 1 \cdot 3}{3 \cdot 2 \cdot 2 \cdot 3} = \frac{-4}{6} + \frac{3}{6} = \frac{-4+3}{6} = -\frac{1}{6}$

A) $-\frac{3}{5}$ B) $-\frac{1}{5}$ C) $-\frac{1}{6}$ D) $\frac{1}{6}$ E) $\frac{1}{5}$

11. $-\frac{2}{3} \times 1\frac{3}{4} = \frac{-2}{3} \times \frac{1 \cdot 4 + 3}{4} = \frac{-2}{3} \times \frac{7}{4} = \frac{-2 \cdot 7}{3 \cdot 4} = -\frac{7}{6}$

A) $-1\frac{1}{2}$ B) $-\frac{7}{6}$ C) $\frac{1}{6}$ D) 5 E) $\frac{13}{12}$

12. $5 \div \left(-\frac{3}{4}\right) = \frac{5}{1} \times \frac{-4}{3} = \frac{5 \cdot -4}{1 \cdot 3} = -\frac{20}{3}$

A) $\frac{1}{2}$ B) 96 C) $-\frac{15}{4}$ D) $-\frac{20}{3}$ E) $\frac{20}{3}$

13. $\frac{1}{2} - \frac{3}{4} \times \frac{2}{3} = \frac{1}{2} - \frac{3 \cdot 2}{4 \cdot 3} = \frac{1}{2} - \frac{1 \cdot 1}{2 \cdot 1} = \frac{1}{2} - \frac{1}{2} = 0$

A) $-\frac{1}{6}$ B) -1 C) 1 D) $\frac{1}{4}$ E) 0

14. $30 \div (5-15) = 30 \div (-10) = -3$

A) -9 B) -3 C) 9 D) -300 E) 3

15. $\frac{5^2 - 4}{-3} = \frac{25 - 4}{-3} = \frac{21}{-3} = -7$

A) -2 B) $-\frac{1}{3}$ C) -7 D) 2 E) 7

16. $\left(-2\frac{2}{3}\right) + \left(1\frac{1}{6}\right) = \left(-\frac{2 \cdot 3 + 2}{3}\right) + \left(\frac{1 \cdot 6 + 1}{6}\right) = \frac{-8 \cdot 2}{3 \cdot 2} + \frac{7}{6} = \frac{-16}{6} + \frac{7}{6} = \frac{-16+7}{6} = \frac{-9}{6} = -\frac{3}{2}$

A) $-\frac{28}{9}$ B) $\frac{3}{2}$ C) $\frac{23}{6}$ D) $-\frac{3}{2}$ E) $-\frac{9}{6}$

17. $\frac{4}{5} \cdot \frac{15}{8} = \frac{4 \cdot 15}{5 \cdot 8} = \frac{4 \cdot 3}{1 \cdot 8} = \frac{12}{8} = \frac{3}{2}$

A) $\frac{3}{2}$ B) $\frac{5}{3}$ C) $-\frac{3}{2}$ D) $\frac{107}{40}$ E) $\frac{32}{75}$

18. $\frac{(3-7)^2}{8} \cdot \frac{-3+1}{2^3} = \frac{(-4)^2}{8} \cdot \frac{-2}{8} = \frac{16}{8} \cdot \frac{-2}{8} = 2 \cdot \frac{-1}{4} = -\frac{1}{2}$

A) $\frac{1}{2}$ B) 1 C) $-\frac{1}{4}$ D) -1 E) $-\frac{1}{2}$

19. The following ratio 12:36:54, in simplest form is:

GCF: 6
 $12:36:54 \div 6 = 2:6:9$

- A) 2:6:8 B) 1:3:4 C) 1:2:3 D) 2:6:9 E) 12:36:48

20. Mark makes \$66 in 4 hours. What is his hourly rate of pay?

$\frac{\$66}{4} = \$16.5/h$

- A) \$16.5 B) \$16 C) \$18.65 D) \$62 E) \$264

21. Solve for x.

$\frac{3}{8} = \frac{x}{15} \Rightarrow$ cross mult. $1 \cdot 15 = 3x \Rightarrow \frac{15}{3} = \frac{3x}{3} \Rightarrow x = 5$

A) 45 B) 5 C) 4.5 D) 4.5 E) 15

Solve for x.

22. $\frac{4}{5} \cdot \frac{10}{x} \Rightarrow 4x = 5 \cdot 10 \Rightarrow \frac{4x}{4} = \frac{50}{4} \Rightarrow 1 \cdot x = 12.5$

A) 12.5 B) 80 C) 0.08 D) 8 E) 2

23. 15% as fraction and decimal is equal to:

$15\% = \frac{15}{100}$ GCF: 5 $\frac{15 \div 5}{100 \div 5} = \frac{3}{20}$
 $15\% = 0.15$

- A) $\frac{3}{20}$ and 0.15 B) $\frac{3}{25}$ and 0.15 C) $\frac{15}{100}$ and 1.5
D) $\frac{15}{100}$ and 0.15 E) $\frac{3}{20}$ and 1.5

$$\frac{2}{300} = \$0.00\bar{6} \qquad \frac{1.60}{200} = 0.008$$

24. Which is a better deal? 300 g of popcorn for \$2.00 or 200 g of popcorn for \$1.60:

- A) 300 g bag B) same cost C) 200 g bag

25. Emily earns \$35 in 5 hours. Jack earns \$60 in 10 hours. Who earns more money, and by how much per hour?

$$\text{Emily } \$35/5h = \$7/h \qquad \text{Jack } \$60/10h = \$6/h$$

- A) Jack by \$1 per hour B) Emily by \$5 per hour C) Emily by \$1 per hour
D) Jack by \$ per hour E) They earn the same

26. 0.01% as a decimal is:

$$0.0001$$

- A) 1 B) 0.001 C) 0.1 D) 0.01 E) 0.0001

27. What is 15% of 220?

$$15\% \cdot 220 = 0.15 \cdot 220 = 33$$

- B) 44 C) 15 D) 22 E) 330

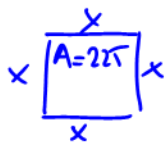
28. The average temperature over three days in Aurora last winter was -10°C . If the temperatures on the first two days were -15°C and 5°C , what was the temperature on the third day?

$$-10 = \frac{\text{Day 1} + \text{Day 2} + \text{Day 3}}{3} \qquad \text{let "x" be Day 3 temp.}$$

$$-10 = \frac{-15 + 5 + x}{3} \Rightarrow \frac{-10 \cdot 3}{3} = \frac{-10 + x}{3} \Rightarrow -10 \cdot 3 = -10 + x \Rightarrow -30 = -10 + x$$

$$-30 + 10 = x \qquad \boxed{x = -20^{\circ}\text{C}}$$

29. Calculate the perimeter of a square that has an area of 225cm^2 .



let 'x' be the side length
Therefore area is
 $A = \text{Length} \cdot \text{width}$

$$225 = x \cdot x$$

$$\sqrt{225} = \sqrt{x^2}$$

$$\boxed{x = 15}$$

\therefore 3rd day, it was -20°C
Perimeter = sum of all sides
 $= 15 + 15 + 15 + 15$
 $= 4 \cdot 15$
 $= 60$
 \therefore The peri. is 60cm

30. Evaluate for $s = -1$ and $t = 16$

sub s & t in brackets $-4s^2 + 2st - s^3 + 3\sqrt{t}$

$$= \frac{-4(-1)^2 + 2(-1)(16) - (-1)^3 + 3\sqrt{16}}{\left(\frac{-1}{16}\right)^3}$$

$$= \frac{-4(1) + (-32) - (-1) + 3 \cdot 4}{\left(\frac{-1}{16}\right)\left(\frac{-1}{16}\right)\left(\frac{-1}{16}\right)}$$

$$= \frac{-4 - 32 + 1 + 12}{\frac{-1}{4096}}$$

$$\left(\frac{s}{t}\right)^3$$

$$= \frac{-23}{\frac{-1}{4096}}$$

means divide

$$= -23 \div \left(\frac{-1}{4096}\right)$$

$$= -23 \times (-4096)$$

$$= 94208$$