

Simplify each of the following. Where applicable, leave answers as fractions.

1) $-\frac{5}{9} \div 3\frac{1}{3}$

2) $-18 - (-13)$

3) $\pm\sqrt{\frac{4}{25}}$

4) $0 \div 8$

5) $-4t + 7t^2 - t$

6) $-2x(3x - 4)$

7) $8x - (6 - 5x) - x$

8) $(-12 - 3 + 4) \cdot -2 - 3$

9) -4^3

10) $(3x)(-8x)(x)$

11) $\frac{24x - 12y}{6}$

12) $(2x - 1)(-x^2)$

13) Evaluate the following when $x = -3$: $[x^2 - (4 - x)^2] \div x^3$ _____

14) Classify the following real numbers. Write all the classifications that apply.

a) -5

b) 4

c) $\sqrt[3]{4.16}$

d) $\sqrt{6}$

Solve the following equations and circle your final answers, which should be in simplest form.

15) $7x - 4 = -2x + 23$

16) $12y + 15 = -3(4y - 5)$

17) $4 - z = 32$

18) $\frac{3}{4}n = -\frac{3}{7}$

19) $\frac{s-3}{5} = \frac{3s+24}{4}$

20) $4(3x-2) = 5(3-2x)$

21) $\frac{2m-3}{4} = -2$

22) **Solve for x:**
 $\frac{4}{3}x + 25 = z$

23) **Solve for x:** $\frac{y}{x} = h$

24) $2|4-x| = 10$

25) $5 - |n+3| = 11$

26) $\frac{2x-1}{-2} = \frac{2-4x}{4}$

- 27) A cell phone company charges 40 cents for the first minute and 25 cents for each subsequent minute. Write and solve an equation to find the number of minutes you talked on a call that cost \$4.65.
- 28) A map is scaled so that 2" = 125 miles. On the map, you see that the distance you need to travel is $3\frac{1}{2}$ ". How many miles do you need to travel?
- 29) What is 24% of 60?
- 30) 24 is 60% of what number?
- 31) 24 is what percent of 60?
- 32) At a "20% Off" sale, a book is on sale for \$19.20. What was the original price of the book?
- 33) You buy an item for \$20 and sell it for \$24. What is your percent of profit?
- 34) Find the simple interest paid over a 9 month period on a \$8,000 loan borrowed at 5.5% per year.

Answers:

1) $-\frac{1}{6}$

2) -5

3) $\pm\frac{2}{5}$

4) 0

5) $7t^2 - 5t$

6) $-6x^2 + 8x$

7) $12x - 6$

8) 19

9) -64

10) $-24x^3$

11) $4x - 2y$

12) $-2x^3 + x^2$

13) $-\frac{58}{27}$

14a) integer \mathbb{Z} , rational \mathbb{Q}

b) natural \mathbb{N} , whole \mathbb{W} , integer \mathbb{Z} ,
rational \mathbb{Q}

c) rational \mathbb{Q}

d) irrational

15) $x = 3$

16) $y = 0$

17) $z = -28$

18) $n = -\frac{4}{7}$

19) $s = -2$

20) $x = \frac{23}{22}$

21) $m = -\frac{5}{2}$

22) $x = \frac{3}{4}(z - 25)$ or $x = \frac{3}{4}z - \frac{75}{4}$

23) $x = \frac{y}{h}$

24) $x = -1$ or $x = 9$

25) \emptyset

26) \mathbb{R}

27) 18 minutes

28) 218.75 miles

29) 14.4

30) 40

31) 40%

32) \$24

33) 20%

34) \$330