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① $5 + (3 \cdot 5) - 2$

$5 + 15 - 2$

$20 - 2$

18

② $(12 \div 2) \cdot 6 + 1$

$6 \cdot 6 + 1$

$36 + 1$

37

③ $4 - (3^2) + 6$

$4 - 9 + 6$

$-5 + 6$

1

④ $(6 \cdot 2) - 8 \div 2 + 4$

$12 - 4 + 4$

$8 + 4$

12

⑤ $-12-(4+3)$

$-12-(7)$

$-12-7$

$-12+(-7)$

-19

⑥ $5-2(4\cdot3)-5$

$5-2(12)-5$

$5-24-5$

$-19-5$

-24

⑦ $9.2\div6-5(2)^2$

$9.2\div6-5(4)$

$18\div6-20$

$3-20$

-17

⑧ $\frac{2-4}{(-3)^2+1}$

$\frac{2-4}{9+1}$

$\frac{-2}{10}$

$-\frac{1}{5}$

$\frac{5}{1}=5$

$\frac{1}{5}$

(9) $[4 + 2(2-5)^2] - 3$

$[4 + 2(-3)^2] - 3$

$[4 + 2(9)] - 3$

$[4 + 18] - 3$

$22 - 3$

19

carefully!

(10) $\frac{3}{4} - \frac{2}{3}\left(\frac{1}{2}\right)^2$

$\frac{3}{4} - \frac{2}{3}\left(\frac{1}{4}\right)$

$\left(\frac{3}{3}\right)\frac{3}{4} - \frac{2}{12}$

$\frac{9}{12} - \frac{2}{12}$?

$\frac{7}{12}$

2.2 (43) $-3(2m-9)+7(m-4)=12-9$

$-6m+27+7m-28=3$

$m-1=3$

$+1 \quad +1$

$m=4$

2.3 (69) $5x+6=2$

$-6 \quad -6$

$\frac{5x}{5}=\frac{-4}{5}$

$x=-\frac{4}{5}$

2.3 (35) $18 - 13 = \frac{1}{2}a + \frac{3}{4}a - \frac{5}{8}a$

$8(5) = \left(\frac{1}{2}a + \frac{3}{4}a - \frac{5}{8}a\right)8$

$40 = 8\left(\frac{1}{2}a\right) + 8\left(\frac{3}{4}a\right) - 8\left(\frac{5}{8}a\right)$

$40 = 4a + 6a - 5a$

$\frac{40}{5} = \frac{5a}{5}$

$8 = a$

2.4 (53) $10[0.2x + 0.5(12-x)] = (3.6)10$

$2x + 5(12-x) = 36$

$2x + 60 - 5x = 36$

$-3x + 60 = 36$

$-60 \quad -60$

$\frac{-3x}{-3} = \frac{-24}{-3}$

$x = 8$

3.6
3.6

2.4 (39)

$$-(3x+1)-(4x-7)=4-(3x+2)$$

$$-3x-1-4x+7=4-3x-2$$

$$-7x+6=2-3x$$

$+7x \qquad +7x$

$$6=2+4x$$

$-2 \quad -2$

$$\frac{4}{4}=\frac{4x}{4}$$

$$1=x$$

$$-7x+6=2-3x$$

$+3x \qquad +3x$

$$-4x+6=2$$

$-6 \quad -6$

$$\frac{-4x}{-4}=\frac{-4}{-4}$$

$$x=1$$

2.5 Basic Percent Problems

Remember $75\% = \frac{75}{100} = \frac{3}{4}$

$75\% \rightarrow .75$

(ex) What number is 25% of 80?

let x = the number

$x = .25(80)$

$x = 20.00$

$x = 20$

(24) What percent of 32 is 4?

Let x = the %

$$\frac{x(32)}{32} = \frac{4}{32}$$

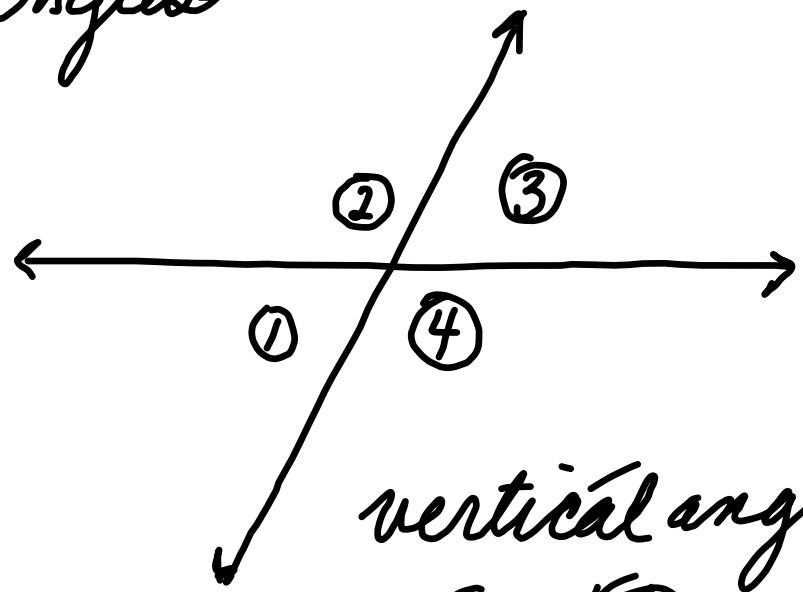
$$x = \frac{1}{8}$$

$$x = .125$$

$$x = 12.5\%$$

$$\begin{array}{r} .125 \\ 8\overline{)1.00} \\ \underline{8} \\ 20 \\ \underline{16} \\ 40 \\ 40 \end{array}$$

Angles



$1+2+3+4 = 360^\circ$

$2+3 = 180^\circ$

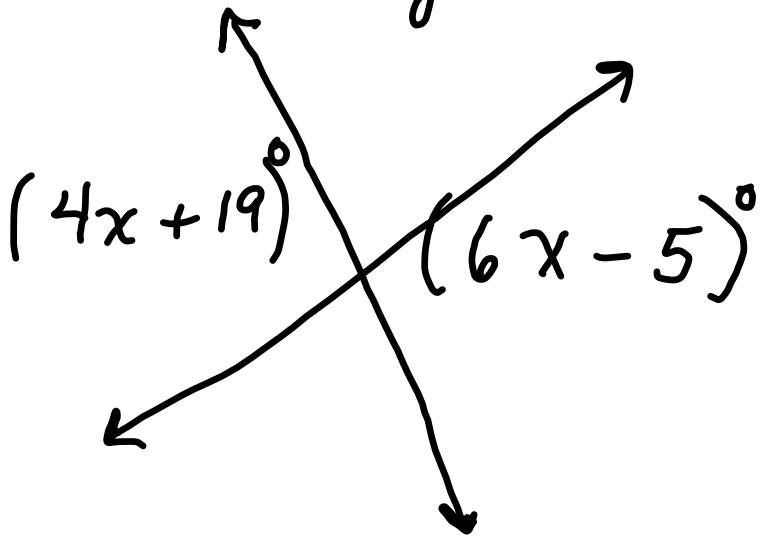
$3+4 = 180^\circ$

vertical angles are equal

$\angle 2 = \angle 4$

$\angle 1 = \angle 3$

(ex) Given the drawing - what are the angles



$4x + 19 = 6x - 5$

$-6x \qquad -6x$

$-2x + 19 = -5$

$-19 \qquad -19$

$\frac{-2x}{-2} = \frac{-24}{-2}$

$x = 12$

$4(12) + 19$

$48 + 19$

$67°$

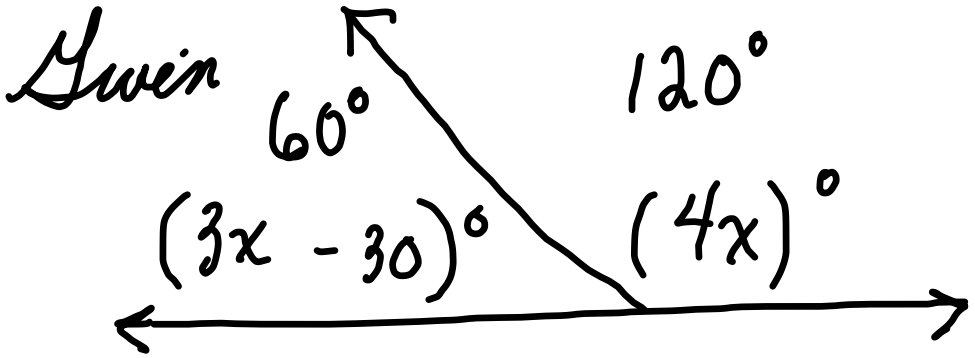
$6(12) - 5$

$72 - 5$

$67°$

The angles are $67°$

Given



$3x - 30 + 4x = 180°$

$7x - 30° = 180°$

$+30° \quad +30°$

$\frac{7x}{7} = \frac{210}{7}$

$x = 30°$

Check

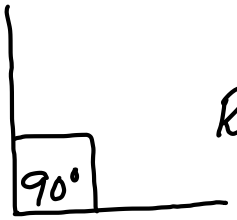
$3(30) - 30$

$90 - 30$

$60°$

$4(30)$

$120°$



Right angle

2.6 Number Problems

Ex The sum of twice a number and four is fourteen. Find the number

① Read carefully and choose the variable for the unknown declare it by writing

let x = the number

② no other variables

③ translate into an equation

④ Solve $2x + 4 = 14$

$-4 \quad -4$

$\frac{2x}{2} = \frac{10}{2}$

$x = 5$ ✓

⑤ ~~Can~~ check

⑥ Write the answer in a complete sentence

The number is 5.