

Warmup

① $(4x\sqrt{2x}-1)(3\sqrt{6x}+4)$

	$4x\sqrt{2x}$	-1
$3\sqrt{6x}$	$12x\sqrt{12x^2}$	$-3\sqrt{6x}$
4	$16x\sqrt{2x}$	-4

$12x\sqrt{12x^2} - 3\sqrt{6x} + 16x\sqrt{2x} - 4$



$12x \cdot 2 \cdot x\sqrt{3} - 3\sqrt{6x} + 16x\sqrt{2x} - 4$

$24x^2\sqrt{3} - 3\sqrt{6x} + 16x\sqrt{2x} - 4$

② FORRESTER turns 41 today
How many mins has she been alive?

$\frac{41 \text{ yrs}}{1} \cdot \frac{365 \text{ days}}{1 \text{ yr}} \cdot \frac{24 \text{ hrs}}{1 \text{ day}} \cdot \frac{60 \text{ min}}{1 \text{ hr}}$

21549600 min

③ Rat or IRR?

- a) $\frac{1}{9}$ Rat
- b) $\sqrt{2}$ IRR
- c) $\sqrt{6} + \sqrt{3}$ IRR

Rational or Irrational**Identify the following as rational or irrational.**

1) $\frac{2}{3}$

2) $\sqrt{27}$

3) 4.575

4) $18.\overline{45}$

5) $\sqrt{147}$

6) $\sqrt{100}$

7) $\sqrt[3]{17}$

8) $2\frac{4}{5}$

9) π

10) -264

11) $\sqrt{27} + \sqrt{3}$

12) $4 + 0.28$

13) $3 + \sqrt{5}$

14) $3\sqrt{5} - \sqrt{20}$

15) $2\sqrt{10} \cdot \sqrt{20}$

16) $\sqrt{10} \cdot 4\sqrt{10}$

17) $\sqrt{6} \cdot 7$

18) $\sqrt{12} \cdot \sqrt{3}$

19) $\frac{5}{6} + \frac{3}{4}$

20) $20.35 + 2.45$

Identify each of the following as rational or irrational.
Then choose the appropriate rule that justifies your answer.

Rules:

- A. The sum of two rational numbers is always rational.
- B. The sum of two irrational numbers is sometimes irrational.
- C. The sum of two irrational numbers is sometimes rational.
- D. The sum of one rational number and one irrational number is always irrational.
- E. The product of two rational numbers is always rational.
- F. The product of two irrational numbers is sometimes rational.
- G. The product of two irrational numbers is sometimes irrational.
- H. The product of one rational number and one irrational number is sometimes irrational.
- I. The product of one rational number and one irrational number is sometimes rational.

21) $6 + \sqrt{4} = 8$
Rat + Rat = Rat
 (A)

22) 2×4.5

23) $\sqrt{6} + 8$

24) $\sqrt{10} \cdot \sqrt{3} = \sqrt{30} = \text{decimal}$
~~IRR · IRR = IRR~~ (G)

25) $\sqrt{12} \cdot \sqrt{3}$

26) $\sqrt{5} + \sqrt{15}$

27) $\sqrt{5} \cdot 0$

28) $\sqrt{7} \cdot 18$

29) $3\sqrt{5} - 3\sqrt{5}$

30) $3\sqrt{2} \cdot \sqrt{8}$