Example 4. Evaluate $3(a-b)+2(a+2b)$ when $a=5$, $b=3$.

Solution: When $a=5$ and $b=3$,

$$\begin{aligned} 3(a-b)+2(a+2b) &= 3(5-3)+2(5+6) \\ &= 3\cdot 2+2\cdot 11 \\ &= 6+22 \\ &= 28 \end{aligned}$$

Exercises [A-1]

Find the value of the following:

1. $2a+b$ when $a=\frac{1}{2}$, $b=3$.
2. $2(3a+b)$ when $a=0.5$, $b=2$.
3. $\dfrac{2x}{y}$ when $x=7$, $y=14$.
4. $\dfrac{2x+5}{3}$ when $x=5$.
5. $\dfrac{7a}{b}-7$ when $a=8$, $b=7$.
6. $(8x-1)(2x+3)$ when $x=1$.
7. $(x+\frac{1}{2})(3x-1)$ when $x=\frac{1}{2}$.
8. $a\cdot b$ when $a=\frac{1}{2}$, $b=6$.
9. $b-a$ when $a=\frac{1}{2}$, $b=6$.
10. $\dfrac{ab}{2}$ when $a=\dfrac{1}{2}$, $b=6$.
11. $\dfrac{a+b}{3}$ when $a=\dfrac{1}{2}$, $b=6$.
12. $\dfrac{a}{2b}$ when $a=\dfrac{1}{2}$, $b=6$.
13. $\dfrac{2a}{b}$ when $a=\dfrac{1}{2}$, $b=6$.
14. $\dfrac{b}{3a}$ when $a=\dfrac{1}{2}$, $b=6$.
15. $\dfrac{2x-y}{4x+1}$ when $x=3$, $y=0$.
16. $\dfrac{2x}{4x+1}-y$ when $x=1$, $y=\dfrac{1}{5}$.
17. $\dfrac{2x-y}{4x}+1$ when $x=5$, $y=10$.
18. $\dfrac{2(x-y)}{4(x+1)}$ when $x=3$, $y=1$.

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1. 4	4. 5	7. $\frac{1}{2}$	10. $1\frac{1}{2}$	13. $\frac{1}{6}$	16. $\frac{1}{5}$
2. 7	5. 1	8. 3	11. $2\frac{1}{6}$	14. 4	17. 1
3. 1	6. 35	9. $5\frac{1}{2}$	12. $\frac{1}{24}$	15. $\frac{6}{13}$	18. $\frac{1}{4}$

Exercises [A-2]

Find the value of the following:

1. $2a - b$ when $a = 3\frac{1}{2}$, $b = \frac{1}{4}$.
2. $5(3a - 5)$ when $a = 4$.
3. $3(b - 2a)$ when $b = 6$, $a = \frac{1}{3}$.
4. $\dfrac{2x - 8}{7}$ when $x = 4$.
5. $\dfrac{1}{2}\left(7a - \dfrac{12}{b}\right)$ when $a = 5$, $b = 2$.
6. $(2x - 3)(x + 2)$ when $x = 5$.
7. $\frac{1}{3}(2x + 5y)(6x - 3y)$ when $x = 3$, $y = 1$.
8. $a + b$ when $a = \frac{1}{2}$, $b = 6$.
9. $a \div b$ when $a = \frac{1}{2}$, $b = 6$.
10. $b \div a$ when $a = \frac{1}{2}$, $b = 6$.
11. $6(b - a)$ when $a = \frac{1}{2}$, $b = 6$.
12. $(a + b)(b - 2a)$ when $a = \frac{1}{2}$, $b = 6$.
13. $a + b(b - 2a)$ when $a = \frac{1}{2}$, $b = 6$.
14. $(a + b)(b) - 2a$ when $a = \frac{1}{2}$, $b = 6$.
15. $\dfrac{a}{b}(b - 2a)$ when $a = \dfrac{1}{2}$, $b = 6$.
16. $2x - \dfrac{y}{4x + 1}$ when $x = 9\frac{1}{2}$, $y = 0$.
17. $\dfrac{2(x - y)}{4x + 1}$ when $x = 3$, $y = 1$.
18. $\dfrac{3(x - y)}{4x} + \dfrac{y - 1}{3}$ when $x = 3$, $y = 1$.

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1. $6\frac{3}{4}$	4. 0	7. 55	10. 12	13. $30\frac{1}{2}$	16. 19
2. 35	5. $14\frac{1}{2}$	8. $6\frac{1}{2}$	11. 33	14. 38	17. $\frac{4}{13}$
3. 16	6. 49	9. $\frac{1}{12}$	12. $32\frac{1}{2}$	15. $\frac{5}{12}$	18. $\frac{1}{2}$